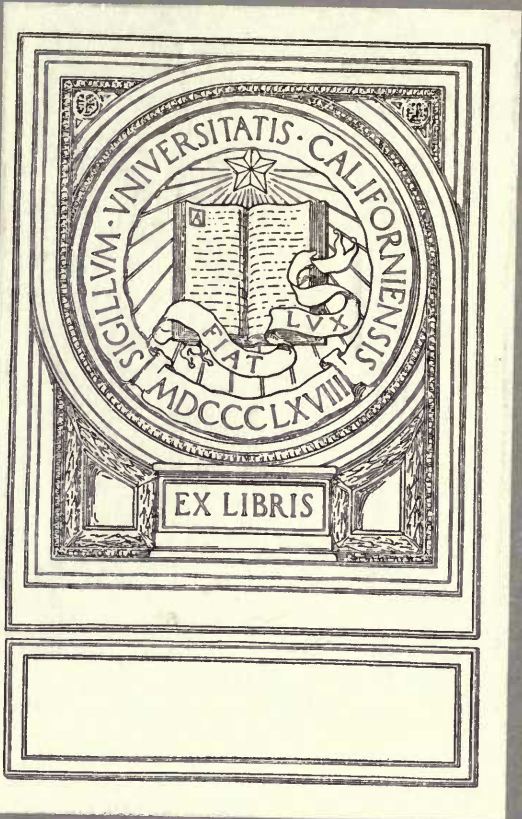




Beautiful Flowering Shrubs



COMMON SYRINGA

Philadelphus coronarius

Beautiful Flowering Shrubs

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With 40 Illustrations from Autochromes by

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Cassell & Company, Ltd
London, New York, Toronto and Melbourne

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AMERICAN

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INTRODUCTION

FLOWERING SHRUBS as a class have been greatly neglected in this country. In private grounds and public parks, where gardening is carried on as a fine art by expert professional gardeners, they have received a certain—though limited—measure of attention, but in the smaller gardens, cultivated more or less by their owners aided by the commonplace gardener, their value, their charm, and, above all, their *variety* are now only beginning to be dimly appreciated. Of course, there are those half dozen or so kinds which meet one's eye everywhere—the Laurustinus, Lilac and Syringa (*Philadelphus*), the Cherry Laurel (usually cropped so as not to flower), the Flowering Currant (only the common red variety), the Broom perhaps, and the Rhododendron, and those three or four others more or less common, a Veronica, the Mahonia (*Berberis aquifolium*), the Japonica (*Cydonia*) and the Kerria; but the rest—the vast majority—so far as the ordinary garden is concerned are more often than not conspicuous by their absence. And yet, if garden owners would but realise it, they have in them the most valuable asset possible in the

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beautifying and diversifying of a garden. They give just sufficient variation of level to the general colour line, they break up the flat monotony that too often spoils a small patch of ground, and they have none of the evil overshadowing effects and the abruptness of trees, while in the infinitude of choice among them lies a great enhancement of interest.

Look, for instance, at the choice in *Spiræas*, from the crimson, flat clustered *S. japonica* to the lovely cascaded *S. Lindleyana*; in *Barberries*, from the vivid grace of *B. stenophylla* in the spring to the sunset-like flare of the *B. Thunbergii* in the autumn; in the *Azaleas*, whose brilliant meteor flash in May gives a perfect orgy of colour joy. From the East and from the West the flowering shrubs of many a genus, and of many a species in that genus, press upon our notice.

From North America there come the *Kalmias*, the *Ceanothuses*, the golden as well as the red Flowering Currants, the *Garrya*, the *Mahonia* (*Berberis aquifolium*), certain *Rhododendrons*, and the Mexican Orange (*Choisya*).

From South America we have the Darwinian *Barberry*, the *Escallonias*, *Azara*, the Fire Bush (*Embothrium*), and *Fuchsias*.

From China and Japan there pour rich stores indeed—*Forsythias*, *Weigela*, *Kerrias*, the *Aucuba*, won-

Introduction

derful Barberries, many pretty Cotoneasters, Deutzias, Hydrangeas, Syringas, unique Viburnums, Buddleias, and Spiræas.

From New Zealand appear some of our latest and most popular acquisitions—the Olearias, Shrubby Veronicas and the Pittosporums, all exclusively native to that land.

A few belong to our continent of Europe—the Rosemary, Gorse, Common Syringa or Mock Orange, the Laurustinus and the Common Barberry; while some—like Mezereon (*Daphne*), the Spurge Laurel, the Wayfaring Tree (*Viburnum*), Broom and Gorse are even native to Great Britain.

The Hypericums are everywhere in the North Temperate Zone. Spiræas, Witch Hazels, Rhododendrons, Azaleas, grace both the New World and the Orient.

Large numbers of these varied genera, and often many species in the genera, will grow in our gardens without any special care. Many, hitherto unknown to the average gardener, amateur or professional, will flourish with only a little extra attention; while some, generally dismissed casually as not suited to our English climate, respond generously to a genuine attempt to grow them. If only one could sweep away nine-tenths of the gross-feeding Laurels and Aucubas that crowd up our small gardens, and replace them with gayer, lighter shrubs,

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one would have done much to add colour to our land.

The age to which a shrub may attain is an interesting question. Some, like Laurels, Aucubas and Rhododendrons may live a hundred years or more, and instances are known of these shrubs at least eighty years old which are still apparently in the prime of life. Other shrubs, like Broom, Ceanothus and Daphne, are old at twenty; while others, such as certain Roses, have run their career in half that time. Unlike the case with trees, few records have been kept of the actual planting of shrubs; it is desirable that more definite information should be acquired on this point.

Lastly, what precisely is a shrub—how limited, how defined? Here is the standard definition: "A shrub is a woody stemmed perennial plant distinguished from a tree chiefly by its low stature, and by having several or many primary stems arising from a point at or near the ground."

BEAUTIFUL FLOWERING SHRUBS

I

DAPHNE

<i>Daphne mezereum</i>	. . .	Mezereon
„ „ <i>var. alba</i>		White Mezereon
„ <i>cneorum</i>	. . .	Garland Flower
„ <i>laureola</i>	. . .	Spurge Laurel

MEZEREON — *Daphne mezereum*—the shrub with the sweet-sounding name and the sinister reputation, the shrub whose delicate fragrance urges to a nearer acquaintanceship, but whose poisonous juices severely punish too presumptuous an interference. Now claimed as a native in some of the more southerly counties of England, it was not so recognised when Gerard wrote his Herball in the days of Queen Elizabeth, though that renowned herbalist knew it well as a plant “that growes naturally in moist and shadowy woods of most of the East countries, especially about Melvon in Poland, from whence,” he tells us, “I have had great plenty for my garden.” He gives “Germane Olive Spurge” as its commonest name then, but adds,

Beautiful Flowering Shrubs

"the apothecaries of our countrey call it Mezereon, but wee had rather name it Chamalea Germanica or Dutch Mezereon." Other names that it has borne at different times are Lady Laurel, Spurge Olive, Spurge Flax, Flowering Spurge, Dwarf Bay, and Mesilion, the countryside variant of its usual name. Mezereon, that quaintest of names, is derived from the old Persian name *Madzaryon*, meaning "destroyer of life," because all parts of the shrub are poisonous.

An old-fashioned little shrub, not more than four or five feet high, it was once in every garden, but its popularity somewhat waned as its medicinal reputation diminished. However, it is now rapidly coming back into favour, and deservedly so, for at that bleak moment when winter is beginning to yield to spring it is

"Though leafless, well attired and thick beset

With blushing wreaths investing every spray."

(*Cowper.*)

In other words its rose-purple flowers break very early into bloom and—stalkless and massed together—clothe the tops of the bare branches as with a garment, and give a warm gay touch when the garden most needs it. Well has it been called "one of the spring gems of the year." On probing among the flowers one discovers that they are not set singly upon the branches, but are in little spreading bunches of three

Daphne

or four together, every bunch surrounded by dark red scales, and so closely clustered that they seem actually to crowd upon each other. These bunches arise immediately above the spots where leaves grew in the previous year, and always on one-year-old shoots.

Each flower is cross shaped, getting its form from four rose-coloured petals, so called, though really in the Mezereon the petals have altogether vanished, and it is the sepals—usually green in a flower—that have become petal-like and pretty. Below the spreading cross of their upper part they unite to form a thick tube, and upon this tube are set eight stamens, mostly head with little stalk. Four of the eight are placed high up near the mouth of the tube and *in the centre of the rose-purple sepals*, and the remaining four are set lower down the tube and alternating with the upper four. It is largely because the top four are opposite the floral leaves instead of alternating with them, as is the rule, that we consider that the corolla of petals has disappeared during the development of the flower. The stamen heads—the anthers—are full of yellow pollen and, when ripe, slit open on their inner faces.

If one next split the flower down, one sees at the very base of the tube a bright green urn-shaped ovary, standing on a tiny pedestal and surmounted by a spreading pale-purple disc, which ovary contains a solitary seed. Indeed the scheme of colour in the

Beautiful Flowering Shrubs

heart of a Mezereon flower is at a brilliant pitch, so vivid is the green of the ovary, so bright is the yellow of the anthers, so rich the rose-purple of the sepals. When the flower opens both sets of essential organs are ready to act—the anthers above opening to discharge their pollen, the flat stigma disc below waiting ready to receive it; and it does not seem as though the Mezereon, at any rate, cared much about being fertilised from its neighbours, in spite of its bountiful supply of honey and scent. Occasionally, no doubt, a grain of pollen may be brought to it by some fairly long-tongued bee or moth—the plant has quite a number of visitors, survivors of the winter cold, especially hive bees—but the great chance is that one of its own pollen grains may fall or be pushed down on to its own stigma and so self-fertilisation happen, and it needs but a single grain of pollen to fertilise the solitary ovule. The only thing that militates against self-fertilisation is that many of the flowers are horizontal, so that the stamens are not actually straight above the receptive stigma,; but indeed, if flowers are quite isolated from any chance of visitors, they still set fruit freely. It almost seems, in fact, as if the plant actually puts difficulties in the way of visitors, the stamens block the tube mouth so much, and the honey which lies in a nectary at the base of the ovary is so difficult of access.

MEZEREON
Daphne Mezereum

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Daphne

Each flower lives from a week to a fortnight or even three weeks (if the weather is very mild), and its scent is strong and very fragrant. "For a few hours the whole of a London house smells sweeter for its [the Mezereon's] presence. Its perfume is peculiar and not quite like anything else I know," says a recent writer.* Then, if not pollinated, it withers and is shed; but if lucky enough to have been fertilised, the ovary quickly swells, bursting the calyx tube, and by May it is a smooth green berry of full size. In late June and early July it ripens into a most alluring scarlet berry whose sweet watery pulp contains the single big black seed. In the berries the plant stores its most virulent portion of poison, and various cases are on record of their fatal effects upon both man and beast. Gerard quaintly remarks, "Also if a drunkard doe eat one graine or berry of this plant, he cannot be allured to drinke any drinke at that time, such will be the heate in his mouth and choking in the throat." And he adds the general warning that this plant is "very dangerous to be taken into the body . . . leaving if it be chewed) such an heate and burning in the throat that it is hard to be quenched," a warning that is here heartily endorsed, for even while penning the above lines the writer absently bit and tasted a rose-purple flower and is now left with burning throat

* Mrs. Earle, "Potpourri from a Surrey Garden."

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and irritated mouth greatly to regret the lapse of thought.

Still, as a medicinal plant the Mezereon has ranked high in the past. It was a principal ingredient in the celebrated "Lisbon diet drink" of the eighteenth century, and pieces of the bark, macerated in vinegar, were used for very effectual blisters. Ointment, too, was made from both bark and berries, while dried pieces of the large and woody root were one of the many infallible cures for toothache advocated by our forbears. In spite of the fact that Mezereon berries have served as poison for foxes and wolves, according to Linnæus, birds appreciate them greatly, robins and blackbirds in particular, while sparrows will carefully pick the single seed out of an unripe berry and reject the pulp. The seeds germinate freely, and it is doubtless due to the kind offices of the birds that the shrub has become naturalised among us.

The leaves are only beginning to appear as the flowers pass over. The opening leaf-buds form quaint little tufts at the very tip of the shoots above the flowers, or from lateral buds lower down. Each bud is long and pointed, and consists of many leaves rolled one round another; and as the leaves successively detach themselves and spread back they form a circular disc, in the centre of which the yet unfolded leaves stand as a circular pinnacle. At one stage

Daphne

one might imagine that every flower-wreathed shoot wore a wide-brimmed pointed hat. The leaves are of quite simple outline, long and rather narrow and of smooth surface; at first of the palest green colour they darken as they age.

There are two varieties of the Daphne, viz. *D. m. alba* where the flowers are white instead of rose-purple (this variety is sometimes found with double flowers), and *D. m. grandiflora* where the flowers are of unusually large size and appear in the autumn.

The Spurge Laurel (*Daphne laureola*) is a member of the same small family—the *Thymelæaceæ*—and the only other British representative of that family. In some quarters its nationality is questioned, but an Elizabethan writer says, "It growes abundantly in the woods in most parts of England." It is chiefly in evidence in the beech woods in the chalk of South-east England. It is liked in gardens for its bright evergreen leaves—hence is it popularly "Laurel"—and for its fragrant whitish-green flowers which come in March or even earlier.

Daphne cneorum—the Garland Flower—is a small evergreen shrub that carries great masses of pinkish flowers.

The whole genus of *Daphne*, is named, of course, after the nymph Daphne, who, according to Homer,

Beautiful Flowering Shrubs

was changed into this shrub to escape her too importunate lover.

Soil and Cultivation.— All the *Daphnes* like moisture and are partial to lime in the soil. Mezereon and the Spurge Laurel are best produced from seed, but *Daphne cneorum* by layering.

II

THE GOLDEN BELL

Forsythia

<i>Forsythia suspensa</i> . . .	Hanging Golden Bell
<i>Forsythia viridissima</i> . . .	Green-leaved Golden Bell

BARE branches hung with a great multitude of golden bells, the gold gleaming in fitful sunshine, its vividness undiluted by any green of foliage as the bells swing in pairs in the blustering March wind—that is the picture of this shrub that makes apparent the appositeness of its title “the shrub of the golden bell.” And the pretty oriental-sounding name suggests its real home, for it came to us a gift from the Far East. Two species are now found in our gardens, the Hanging Golden Bell (*Forsythia suspensa*), with lissom graceful shoots that trail from wall or arch, and the Green-leaved Golden Bell (*Forsythia viridissima*), a compact erect shrub whose flowers are somewhat more thickly set upon the branches.

The former is the more familiar in our gardens and is the one we knew first, for it was brought to Europe—to Holland indeed—from Japan in the year

Beautiful Flowering Shrubs

1832, "a pretty shrub introduced to the gardens of Japan from China," said the renowned botanist, Dr. von Siebold, who, in his "Flora Japonica," was the first to describe it. (Hence it is sometimes known as *Forsythia Sieboldii*.)

Of the discovery of the second, we have the whole story from the finder. Some time in the "thirties" of last century, Robert Fortune came from the Edinburgh Botanical Gardens to be superintendent of the Horticultural Society's hothouses at Chiswick. He was a young man who combined a rare knowledge of flowers with a great love of adventure, so in 1842, just as China was settling down after a war, the Society sent him out to the East to collect rare and new plants for the Gardens, an honour with more than a spice of danger about it. Keenly enthusiastic, he visited many parts of China and was very successful in his finds. On one occasion, sailing on the river Min to the island of Chusan, he was twice attacked by pirates; his Chinese crew were too cowardly to fight, and he had to drive off the robbers as best as he could unassisted. Arrived at the island, he visited the renowned gardens—the so-called "Grotto Garden"—of a certain Chinese mandarin, and there he first saw growing the plant afterwards known as *Forsythia viridissima*, the Green-leaved Golden Bell, a very handsome and ornamental bush of rich green colour. He discovered it was

The Golden Bell

a great favourite with the Chinese and generally found a place in the gardens of the rich, and he secured a specimen for his Society. But later on he came across it growing wild among the mountains of the interior in the province of Chekiang, "where I thought it," he tells us, "even more ornamental in its natural state amongst the hedges than when cultivated in the fairy gardens of the Mandarins."

This Forsythia, together with new azaleas, daphnes, honeysuckles, and "a perfect gem" of a chrysanthemum, formed part of the contents of those eighteen glazed chests sent home by Robert Fortune, which arrived in beautiful condition in England at the end of the year 1845.

On his return the explorer was made Curator of the Botanic Garden at Chelsea where, with characteristic energy, he at once set great reforms in progress. By the way, the Forsythia was named in honour of a previous Curator of these gardens, William Forsyth, who lived from 1737 to 1804, and who is said to have done more for the general improvement of fruit culture than any other gardener of his time, and, indeed, of most times.

The flowers of both species of the Golden Bell are distinctly interesting. They all look precisely alike, but a closer examination shows certain differences, not between species and species but between the flowers

Beautiful Flowering Shrubs

on different shrubs of the same species. In all the bells there is a small calyx of four sepals, in all there is a brilliant corolla cut deeply up into four lobes, which spread somewhat outwards. Honey is concealed within the bell at the top. But now come differences. Sometimes on turning up a flower we find a thick cylindrical yellow head, like a clapper, thrusting itself forward and supported on two tall pillars. This represents two stamens whose heads are touching, and if the flower has been open a short time this head will be coated with pollen, for the anthers open outwards disclosing their pollen contents. Half-way down, between the pillars, is a greenish object—the stigma—looking like a couple of stout oval wings, set upon a short, thick green column—the style—that itself stands upon the seed-case. This form of flower seems almost always in this country to characterise the shoots of the trailing species, *Forsythia suspensa*.

In other flowers, notably those found on the erect stiffer shrub, *Forsythia viridissima*, the ovary column is longer than the stamens and projects right beyond them, carrying out into prominence the two broad green wings of the stigma; and somewhat below it, standing one on either side like sentinels, are the two stamens, their heads now kept well apart by the green central pillar.

But though one kind of flower-structure predomi-

HANGING GOLDEN BELL

Forsythia suspensa

HANGING GOLDEN BELLS

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The Golden Bell

nates on the trailing species and another on the erect species, yet really both kinds of Golden Bell are dimorphic, i.e. can carry both kinds of flowers. Sir Joseph Hooker sent for flowers of the *F. suspensa* direct from Japan and China, and then compared them with his own growing at Kew, and he found that those from Japan had short styles and tall stamens, while those from China and Kew had the reverse form. No doubt in the scheme of Nature, fertilisation, to be effective, should be a cross between the two kinds of flowers, the long-styled being fertilised by pollen from the long stamens and vice versa, and it is a curious fact that in England the shrubs never appear to bear fruit.

These flowers are visited by both honey bees and beetles, and in the long-styled flowers, where self-fertilisation is impossible because the pollen is produced below the style, they no doubt bring about cross-fertilisation, since the stigma presses on the visitor's pollen-dusty body before the insect can reach the flower's own pollen. According to Knuth, the style in *F. viridissima* is sometimes scarcely longer than the stamens, in which case the flower fertilises itself.

The leaves follow upon the fading of the flowers. Those of the species *viridissima* are long, narrow and of plain outline, folding over one another in the bud; those of *suspensa* are broader, and are occasionally lobed.

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F. viridissima is also distinguished by forming a very large number of prominent buds, half of these being reserve buds, only to be called into play if the others fail.

Both kinds of Forsythia demand the sun. They come from the "Gardens of the Sun" in the East, and in the shade they are starved of their birthright and resent it. "*Forsythia suspensa*," says Mr. William Robinson, "is certainly one of our finest shrubs, and should be found in any garden however small."

The Golden Bells belong to the family *Oleaceæ* and have for their nearest relatives the privet, the olive, the lilac and the ash.

Soil and Cultivation.—The Forsythias demand good loamy soil. They can be easily grown from cuttings; indeed, where the trailing shoots of the *F. suspensa* touch the ground, there they will put out rootlets and establish themselves as new plants all round the parent one. They require little attention, and any pruning should be done immediately after the flowering is over. The flowers are produced on the wood of the previous year's growth.

III

THE FLOWERING CURRANTS

Ribes

<i>Ribes sanguineum</i>	. . .	The Flowering Currant
„ <i>aureum</i>	. . .	The Golden Flowering Currant, or Buffalo Currant, or Missouri Currant
<i>Ribes laurifolium</i>	. . .	The Laurel-leaved Currant
„ <i>speciosum</i> or <i>R. fuch-</i> <i>sioides</i>		The Fuchsia Flowering Currant, or Scarlet-flowered Gooseberry

THE Common Flowering Currant, *R. sanguineum*, responds with peculiar warmth and vividness to the chilly touch of the earliest spring days. Its winter buds, set five on each long turn of a spiral winding round the copper-coloured stalks, swell rapidly, and out between translucent pink-tinged bracts the pleated leaves begin to push. Sometimes the earliest emerging leaf appears as a tiny folded fan upon a broad thick scale, which scale—technically a pair of stipules—is fringed with a few simple hairs, and wraps protectingly as an additional coat round the still younger leaves. Maybe the fact that the thrusting apart of the bracts deprives the inner leaves

Beautiful Flowering Shrubs

somewhat prematurely of their winter coat of bud scales accounts for the provision of this extra shield. The stalk above the stipules quickly grows and carries out the expanding leaf blade. Three leaves usually come out of each bud, and as they delicately unpleat they prove to have five main veins carrying leaf tissue of the freshest, brightest green.

But running a race with the coming leaves are the coming flowers, for in the centre of the leaf stalk is a tiny pointed pink bud which, when the whole winter bud bursts, swells and breaks up into parts showing a rich crimson lustre. Its stalk grows too, and then it falls over and droops; its many parts prove each a flower-in-the-making, and soon the tiny pointed bud is transformed into a cascade of ruddy flowers and crimson buds, the buds at the bottom, the open flowers atop. Very shortly, though March may still be roaring like a lion, the whole shrub, with its roseate flower cascades drooping beneath the half-formed fresh green foliage, is a perfect picture of vivid spring beauty, with a colour contrast so strong that, to see it at its best, it should be planted in isolation or in a group with only others of its kind with ample space around, or as a garden hedge. Its charm is intensified by the incense-like fragrance that it exhales—a scent that memory links with swinging censers in some dim ancient aisle.

The Flowering Currants

No wonder that during the past century the Flowering Currant, though entering Britain as an alien, has found its way into gardens of every rank, and is known by even the veriest garden tyro. The year 1914, indeed, marked the centenary of its first introduction in formal botanical language to English flower lovers, but the introduction was only made from poor dried specimens that could tell nothing of the glorious beauty of the shrub in its native home; it was not until more than a decade later that the first plant blossomed in our land.

The discovery of the Flowering Currant has a flavour of historical interest about it. At the end of the eighteenth century, a certain Mr. Archibald Menzies, a doctor in the Royal Navy, and "one of the most excellent of men and the most liberal of botanists," as we are told, visited, on a voyage round the world, the coast of North-west America, and there, in 1787, he saw the Flowering Currant near Nootka Sound. He found it growing in partly shaded places, along the banks of streams and never beyond the sea-breezes, and made a special note of it. On his return to England he had the luck to find an expedition being fitted out by the British Government principally with a view to ascertaining the existence of any navigable communication between the North Pacific and the North Atlantic Oceans, which expedition was

Beautiful Flowering Shrubs

under the command of the celebrated Captain Vancouver (who gave the name to our colony of Vancouver). And since the plant life of the countries visited was a secondary object of investigation for the expedition, and neither captain nor crew knew anything of botany, Menzies was offered the appointment as botanist, and thus returned to the coast he had so lately seen.

Among other places the expedition visited Nootka Sound, and when it came home again, in 1795, specimens of the Flowering Currant, which was found all along the coast of California and Oregon, were among the treasures Menzies brought back. He placed the dried shoots, some in the herbarium of the British Museum, and some in that of Sir Joseph Banks, and there—as so often happens in the case of the trophies of scientific expeditions—they were left unheeded and ignored. Nearly twenty years later they were, however, unearthed by Menzies himself, and their formal description, already referred to, written up by him.

But still England knew nothing of the living plant, and it was left to that remarkable botanical explorer, David Douglas, of tragic fate, to produce it. In 1822 this plant collector was ranging America in search of new spoil and, struck by the beauty of this shrub, he forwarded seeds of it right across the continent of

The Flowering Currants

America to the gardens of the Horticultural Society at Chiswick, and there they were planted in an open border in the spring of 1828. Two years later they were flourishing plants flowering in great profuseness—the first of the myriad Flowering Currant bushes to deck our land. Douglas himself regarded his find as “one of the finest and most interesting additions that have been made to our shrubberies for many years,” and he believed that, “few plants possess greater claim to our attention as an ornamental shrub than *Ribes sanguineum*.” * (It may be remarked that the memory of both Menzies and Douglas is kept green in the names of certain plants; the former in the *Menziesia*, a group of heath-like plants, and the latter in the Douglas Pine.) David Douglas came to an untimely end in the Sandwich Isles by falling into a wild beast snare dug by natives. Unfortunately it caught a beast as well as the explorer, and only the former survived the encounter.

The generic name *Ribes*, which designates, of course, the whole group of Gooseberries and Red and Black Currants, is derived from an Arabian word given by Arabian physicians to certain acid berries, probably those of species of *Rheum* growing in the East; later this name was transferred by the herbalists to the

* Again and again in his Journal (recently published by the R.H.S.) he expresses pleasure.

Beautiful Flowering Shrubs

familiar Red Currant; the specific name, *sanguineum*, was given to the shrub about 1811 by Pursh, an American botanist, because of its brilliant colouring. Prof. Church points out that the red pigment that flushes the blossoms and bracts is not dependent on light for its appearance but is a product of the normal process of food manufacture. If a shoot on which the winter buds are just bursting is placed in water in a warm light room, the dwarfed clusters of flowers that emerge will be white, not red, because they are starved of their usual food supply.

Let us next turn to examine minutely the lovely hanging flower clusters. Twenty to thirty blossoms compose each. Each flower has five pink sepals spreading star-wise; within, standing up as a little tube, are five petals, quite white when the flower first opens, but gaining a rosy hue as time passes. The tube dilates a little at the base to accommodate a large drop of honey. Alternating with the petals, and a little shorter and somewhat concealed by them, are five stamens containing white pollen, while in the very centre of all is a thickish green column standing on a flattened ovary, its base bathed in honey, while its tip forks into a stigma. This stigma, sticky to catch fertilising pollen, is held well above the stamens to prevent any possibility of self-fertilisation, a precaution doubly safeguarded by the fact that the stigma is

FLOWERING CURRANT

Ribes sanguineum



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The Flowering Currants

ready to receive the moment the flower opens, while the anthers below are not quite so alert to discharge their pollen. Hence, in any case, the first chance of fertilisation will come from a slightly older flower.

Obviously it is a flower designed to attract insect life—the honey, the brilliant colouring, the massing together of individual flowers into clusters, their conspicuousness in early days before the foliage develops, all make an irresistible bid for attention, and many bees and moths visit it. A little coal-black bee—the size of a small humble-bee—with a long proboscis and shaggy hind legs that can carry off plenty of pollen, is a very assiduous visitor on sunny April days, and can often be watched in eager quest rummaging in the more newly-opened flowers. This particular bee is of the female sex and by name *Anthophora pilipes*. Hive bees, particularly in cold weather, are more apt to bore through the flower walls than to reach the honey by legitimate means.

Each flower cluster will hang gaily on the shrub for four or five weeks, though each individual flower has only a life of from five to ten days. A score of flowers may be at their zenith together and competing for visitors, but usually only some half a dozen are really functioning. If no insects visit, then no fruit is formed. If, however, each flower is artificially fertilised by its own pollen then, though fruit “sets,” it rarely develops to maturity.

Beautiful Flowering Shrubs

Flowering finishes in the early part of May, and the flush fades from the shrub, while the new foliage springs to its full development. Each little receptacle on which a flower is set becomes a tiny water reservoir for the service of the developing fruit. When the season is very dry, much of the fruit falls. In August the berries are ripe, but out of each cluster of twenty to thirty flowers less than one-third give rise to fruit. Each berry is blue-black, and is coated with wax, which gives it a beautiful "bloom." It contains many seeds. But in spite of the fact that its relatives produce berries so delectable as the red and black currants, this shrub throws all its desirableness into its flowers, and its fruits, to quote David Douglas, are "of so musky and unpleasant a flavour that the berries continue to hang on the bushes throughout the winter, even the birds refusing to make them a part of their food."

This "musky and unpleasant flavour" we may correlate with the incense-like fragrance of the shrub. For this fragrance, unlike that of many plants, has no reference to insects, but is the plant's method of warning off browsing animals, a sign manual of an oil contained in myriads of little glands over the whole of its surface—branches, leaves, flowers—which oil is utterly distasteful to the palate of those that browse. And thus does the Flowering Currant defend itself from enemies.

The Flowering Currants

This shrub may grow to a height of ten feet. It is remarkable for the number of varieties under which it is known. Thus in one, perhaps the finest of all—*R. s. splendens*—there are large clusters of the deepest, richest crimson; in *R. s. atrorubens*, though the colour is almost as deep, yet the effect is lightened by each flower having a white centre; while in *R. s. carneum* we have washed-out looking clusters of pale pink, though an even paler hue distinguishes the blossom of *R. s. albidum*, and so on.

In the Buffalo or Missouri Currant (*R. aureum*), the flower clusters are a golden-yellow instead of red. In the variety *R. a. præcox* they are extra large, and the petals are red-tipped and the sepals turned right back. It flowers at the same time as the ordinary red species, and is a most effective shrub. It is a native of the United States, and was first seen in England in 1812, though until lately it has not been greatly cultivated.

The Fuchsia Flowering Currant, *R. speciosum* (sometimes and perhaps better known as *R. fuchsioides*), is particularly interesting because its flowers, which hang from the inner side of the branches in twos and threes (and not in dense clusters), are curiously like miniature fuchsia blossoms. There is a red tube composed of sepals and petals, and hanging far beyond it are the stamens with long red filaments and purple

Beautiful Flowering Shrubs

anthers. The parts of the flower are in fours instead of in fives, as in the other Flowering Currants. Fruit is very rarely borne in this country. The leaves are like those of the gooseberry, hence a popular name—the Scarlet-Flowered Gooseberry. The plant is not as often found as it might be, for it makes a most excellent and interesting wall shrub and very early comes into leaf. It was discovered by Archibald Menzies at the same time as the ordinary Flowering Currant, but was not known in England until Dr. Collie brought it from Monterey in 1828.

All these *Ribes* are armed with spines.

A new *Ribes*, *R. laurifolium*, was introduced some ten years ago (1908) by Mr. Wilson from North China, where, however, it is rarely found wild. Its flowers lack any reds and golds and are merely a pale greenish colour, but at Aldenham a shrub that has been in the open for the past five or six years is very flourishing and most attractive in the earliest spring days when its long yellow-green clusters droop among the young, fresh foliage. This shrub is further characterised by being unisexual, the male flowers being borne on one shrub and the female on another.

Soil and Cultivation.—The Flowering Currants are easy to cultivate in ordinary garden soil. They are propagated by cuttings.

IV

THE BARBERRIES

<i>Berberis aquifolium</i>	.	.	Mahonia, Oregon Grape
„ <i>Darwinii</i>	.	.	Darwinian Barberry
„ <i>stenophylla</i> (hybrid)	.	.	= <i>B. Darwinii</i> × <i>B. empetrifolia</i>
„ <i>japonica</i>	.	.	Japanese Barberry
„ <i>Thunbergii</i>	.	.	Thunberg's Barberry
„ <i>vulgaris</i>	.	.	Common Barberry

THERE are endless species of Barberries, but only three are at all generally found in our British gardens, and these three are the Mahonia (*Berberis aquifolium*), whose gay, lemon-coloured clusters of small flowers and compound, semi-prickly leaves are noticeable on every hand in the spring-time; the Darwinian Barberry (*B. Darwinii*), the most beautiful of all Barberries, with stems thickly studded with orange-red flowers and small dark leaves; and the Common Barberry, whose place is usually in some old-fashioned garden redolent of the past. A fourth species, Thunberg's Barberry (*B. Thunbergii*), is now making its way into popularity on account of the vivid crimsons of its autumn foliage; while a fifth, the Japanese Mahonia, built on quaint unusual lines, only

Beautiful Flowering Shrubs

needs to be better known to make it increasingly welcome.

The Common Barberry is, of course, the original one of our gardens, and it was of this plant that the learned Dr. Culpepper wrote in the reign of Charles I, "Mars owns this shrub and presents it to the use of my countrymen to purge their bodies of choler." It is usually said that it is really a true native of Great Britain, and Gerard certainly declares in 1597 that "the Barberry bush growes of it selfe in untoiled places and desart grounds, in woods and the borders of fields"; but, on the other hand, we know that it was one of those shrubs definitely planted by our ancestors.

"The barberry, respis and gooseberry, too,
Looke now to be planted as other things doo,"

runs a gardening rhyme of four centuries ago, and Gerard himself mentions the planting of it in gardens. Then it was cultivated with a utilitarian object, for the tender leaves with their acid juices were largely used in "sallets," or "stamped" and made into a green sauce which, we are told, "doth coole hot stomacks and procureth appetite." The scarlet, bead-like fruits, too, were transformed into a conserve that, in those days of less variety in these matters, was much esteemed, and the liking for which still lingers in certain districts. "We consider our barberries as not the least impor-

The Barberries

tant of our fruit crops. We preserve them, some in bunches, some picked like currants. We crystallise them in sugar and they become delicious bonbons. We steep them in salt and water and they keep as a gay garnish for cold meat or game."*

As an ornamental shrub it has beauty both in flower and in fruit. Rather tall, its branches carry the pale green, oval leaves arranged in small groups. Hidden under each group are three sharp spines—metamorphosed leaves—which guard the foliage from unlawful designs upon it. Since the spurs are in trinities the shrub was sometimes known as "the Holy Thorn," and it is one of those that tradition credits with having formed part of the Crown of Thorns. The flowers are small and pale yellow and hang in clusters from the axils of the leaf tufts. The fruits, each containing a single seed, are like long thin pieces of coral, hence the shrub's old name of "Piprage" or "Pipe-ridge," or "Pepperidge Tree," all of which stand for "redpip."

The Mahonia (*B. aquifolium*) of everyone's garden also carries yellow flowers set in racemes, or clusters, but here they are carried erect at the end of the branches. It is a plant hailing from the western coast of North America, and was found by David Douglas in 1825 at Fort Vancouver while he was living there in a hut made of bark, and sleeping in the open.

* Bright, in "A Lancashire Garden," 1874

Beautiful Flowering Shrubs

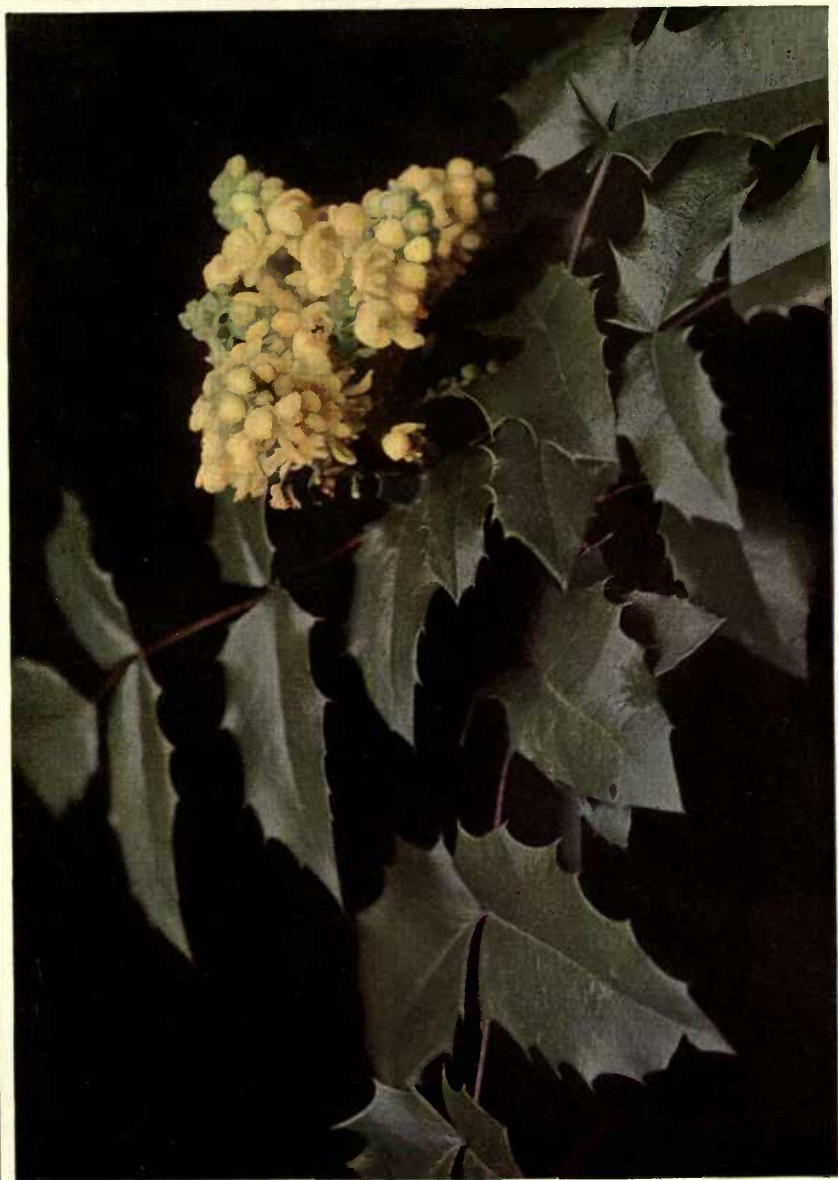
[This latter feat he records as an act of bravery for, as he truly remarks, "In England people shudder at the idea of people sleeping with their windows open," and at first he himself looked on the habit "with a sort of dread!"] He collected the seeds and sent them back to England. This shrub was justly looked upon by him as one of his greatest "finds," and indeed few plants have been more valuable additions to our gardens than this. It will grow anywhere, even under the shade of trees, and is most hardy. Its shining evergreen foliage is a joy all the year round with its varying tints of green, purple and red. The leaves are cut up into two, three or four pairs of leaflets with a terminal leaflet. Their margins are wavy and set with tender spines. In autumn black berries with a lovely purple bloom stand out as a new beauty among the ruddy-tinging foliage. It is rather a low-growing shrub, usually not more than two or three feet high.

When one turns to a group of the Darwinian Barberries (*B. Darwinii*) in the zenith of their glory in late April and early May and notes their rich orange flowers, red-touched, closely clustered along the branches, the massing of the blossoms redeeming their small size from insignificance, and the vivid hue enhanced by the black-green foliage, one sees a spectacle of shrub display that cannot easily be forgotten.

MAHONIA (Oregon Grape)

Berberis Aquifolium

May 1964
California



The Barberries

Fitting indeed is this shrub as a remembrance of the great scientist whose name it bears. A Chilian plant, it was first brought to the notice of Englishmen by Charles Darwin, who found it on his celebrated voyage round the world on the *Beagle*, 1831-1836. But its entrance into our gardens dates from a more recent year, and is owed to a Cornishman, William Lobb, who was one of Messrs. Veitch's most successful plant collectors. Sent out by this firm in search of new and rare flowers to the then almost unknown regions of Chile, his first journey in 1840 had, as a prime result, the introduction here of the well-known *Araucaria*, the "Monkey Puzzler"; and his second journey, five years later, gave, as chief treasure, the Darwinian Barberry, which he found growing profusely in Chiloë, an island off the south coast of Chile. "If Messrs. Veitch had done nothing else towards beautifying our gardens, the introduction to this single species would be enough to earn the gratitude of the whole gardening world, in England at any rate,"* was the welcome given to the new shrub.

The plant has proved thoroughly hardy here and will grow in almost any garden soil. Its evergreen leaves are about an inch in length, and are of curious, often triangular shape, ending in a sharp, almost prickly point, below which are a pair of shoulders,

* *Gardener's Chronicle.*

Beautiful Flowering Shrubs

each also with a stiffened point. Sometimes, half-way down the margin, is yet another pair of sharpened spurs. The leaves are grouped together in threes, and set thickly upon the branches. From each group hangs a little brilliant flower cluster, whose vivid scheme of colouring extends even to tinging the flower-stalks with a rich red.

The whole bell-shaped flower, too, is one mass of colour undiluted by green. Its structure (as apart from colouring) is that common to all Barberries, and the following description also applies to the two species already mentioned. The eight or nine distinct sepals, which vary in size, as well as the six separate petals, are a brilliant orange, with a suggestion of red on the outermost sepals' backs. The petals are markedly concave, and on the inner side of every one are two yellow cushions, which contain abundant honey. When we come to the six stamens we come to the part of greatest interest in the whole plant, for they are most remarkable, sensitive organs, which can "feel" a touch and respond to it with a quick movement. Each has a particularly interesting structure. Its yellow filament is carried up between the two pollen cases, separating them. A third of the way down are two little projections, like arm stumps. The pollen cases are closed by oval flaps on their outer side, which open like trap-doors when the pollen is mature and the weather

The Barberries

is fine, but close when the weather is bad. This is a very unusual way for a pollen case to open, and it can easily be seen by the aid of a hand lens. The six stamens are arranged round a seed-case containing many tiny ovules, which ovary supports a reddish stigma disc upon a thick column.

The stamens lean backwards so that they are almost hidden in the petals' hollows, but if one takes a pin and just touches one somewhere on the inner side near the base of the filament, that stamen will promptly raise itself and stand upright. If one lays the pin across several together, they will act in unison and close in round the style and stigma. (N.B. a flower must not be too old or this pretty little experiment may fail.) So when insects such as flies, beetles, bees and wasps come searching for the honey that overflows from the yellow nectaries and lies round the base of the stamen filaments, they are bound to touch with foreleg or proboscis the sensitive surface, upon which the stamen promptly raises itself out of its dry security in the petal concavity, and deposits its pollen upon the unsuspecting stimulator. As the stamen moves upwards the insect moves towards the stigma, and hence its head comes between the stigma and pollen and effectually keeps them apart. Therefore the flower does not fertilise itself, in spite of the fact that in all the Barberries the stigma is mature and in a receptive

Beautiful Flowering Shrubs

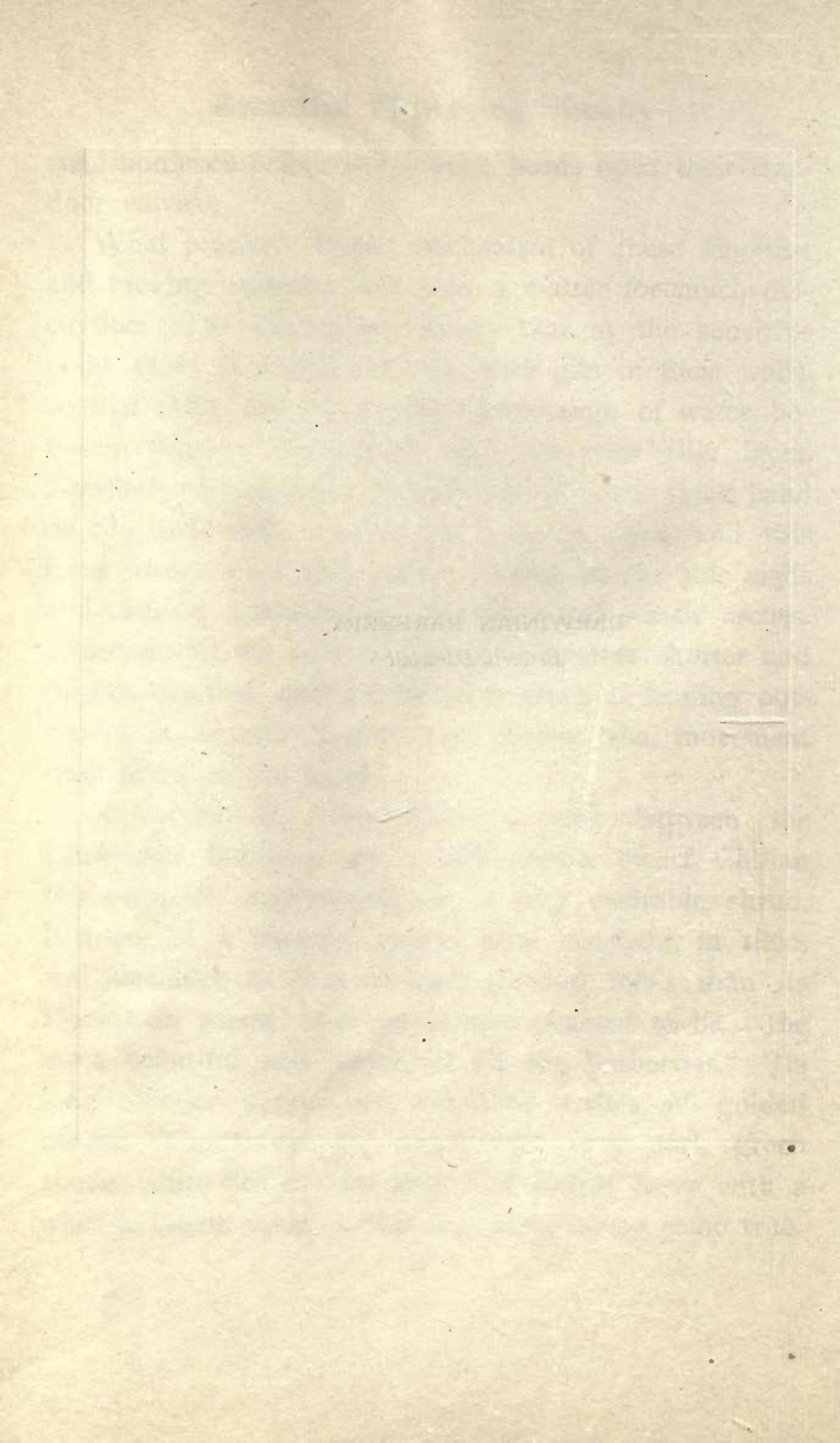
condition even before the stamen heads open their trap-door valves.

What precisely is the mechanism of these sensitive and moving stamens has been a matter for much discussion. The microscope shows that at the sensitive point there is a layer of cells with pits in their walls, so that there can be a rapid interchange of water between them. Thin-walled cells lie over this layer. Normally the contents of the cells are in a thick band on the back wall. Touch the sensitive spot, and this band becomes lax and curves, pulling in the side walls and causing pressure on the outer wall which arches. Therefore all the cells of the layer become shorter and thicker together, and the filament, which is leaning outwards, is sharply pulled up. Hence the movement responding to the touch.

A hybrid—*B. stenophylla*—a cross between the Darwinian Barberry and a little-known dwarf Chilian Barberry—*B. empetrifolia*—is a very desirable shrub. It arose in a nursery garden near Sheffield, in 1860, and inasmuch as it is of more graceful habit than its Darwinian parent, it is sometimes claimed to be "the most beautiful and useful of all the barberries." Its long slender sprays are veritable arches of golden bloom. The leaves are small and very dark green above, white below. Its fruit is a purple berry with a whitish bloom upon it, but the seeds rarely come true.

DARWINIAN BARBERRY

Berberis Darwinii



Uru,
Calipo



The Barberries

Thunberg's Barberry (*Berberis Thunbergii*), with its crowded tufts of small leaves and its solitary yellow flowers hanging singly, has no special beauty in the spring-time. Its glory comes with the dying year when, under the pale November sunshine, it transforms into a shrub of flame, a veritable burning bush, punctuated by brilliant scarlet lines—the long narrow fruit. The consummation of the season's life of this shrub expresses itself in the bright-hued fruit, but the decay and dissolution of its leaves is an end of no less brilliancy, so vivid are their crimsons, scarlets and reds.

A plant from the far East, it was noted by Thunberg at the end of the eighteenth century, but it was not brought into England until the sixties. For touches of gaiety in autumn days no better plant could be placed in any garden. Like the Common Barberry it is a deciduous plant.

The Japanese Mahonia (*B. japonica*) is a very striking evergreen shrub. Its leaves are a large and coarse replica of those of the Mahonia, as many as thirteen leaflets sometimes making up a leaf. Their margins are deeply toothed and very spiny. The flowers, which appear in March, are arranged on a number of spikes, some six or seven inches long, which spikes are gathered into clusters at the tips of the branches. They are characterised by a very sweet fragrance. The fruit is an elongated purple berry.

Beautiful Flowering Shrubs

This shrub should be given some shelter and a specially sunny outlook.

The Barberry belongs to the small and unimportant family *Berberidaceæ*. It is said that the name Barberry is a corruption of "Amyrberis," by which term the Arabian physicians of the twelfth century knew the Common Barberry.

Soil and Cultivation.—Barberries, while preferring a warm loam, grow readily in most soil. They are readily propagated from seed; cuttings of ripened wood must be raised in a cold frame. These shrubs also lend themselves to division.

V

THE QUINCES

<i>Cydonia vulgaris</i>	.	.	The Common Quince
„ <i>japonica</i>	.	.	“Japonica,” the Japanese Quince
„ <i>sinensis</i>	.	.	Chinese Quince
„ <i>cathayensis</i>			
„ <i>Maulei</i>	.	.	Maule's Quince

“**A** QUINCE, surely the most beautiful of all flowering shrubs, every long green curving branch starred with large single delicate pink and white blossoms. Bear with me if I do not describe it adequately; for in truth, I think the poet himself could not do so. If I spoke of it as a shower or rather a fountain of bloom, a fountain whose delicate dome curves and falls, but fades and fails not, should I be exaggerating or . . . pressing the power of language too far and striving to make words serve more than their large but withal limited purpose?”

It was the Common Quince in “Veronica’s Garden” that called forth this outburst of enthusiasm on the part of the Poet Laureate, and it was not misplaced, though recognition of the beauty of Quinces in general seems for the most part strangely limited to that of

Beautiful Flowering Shrubs

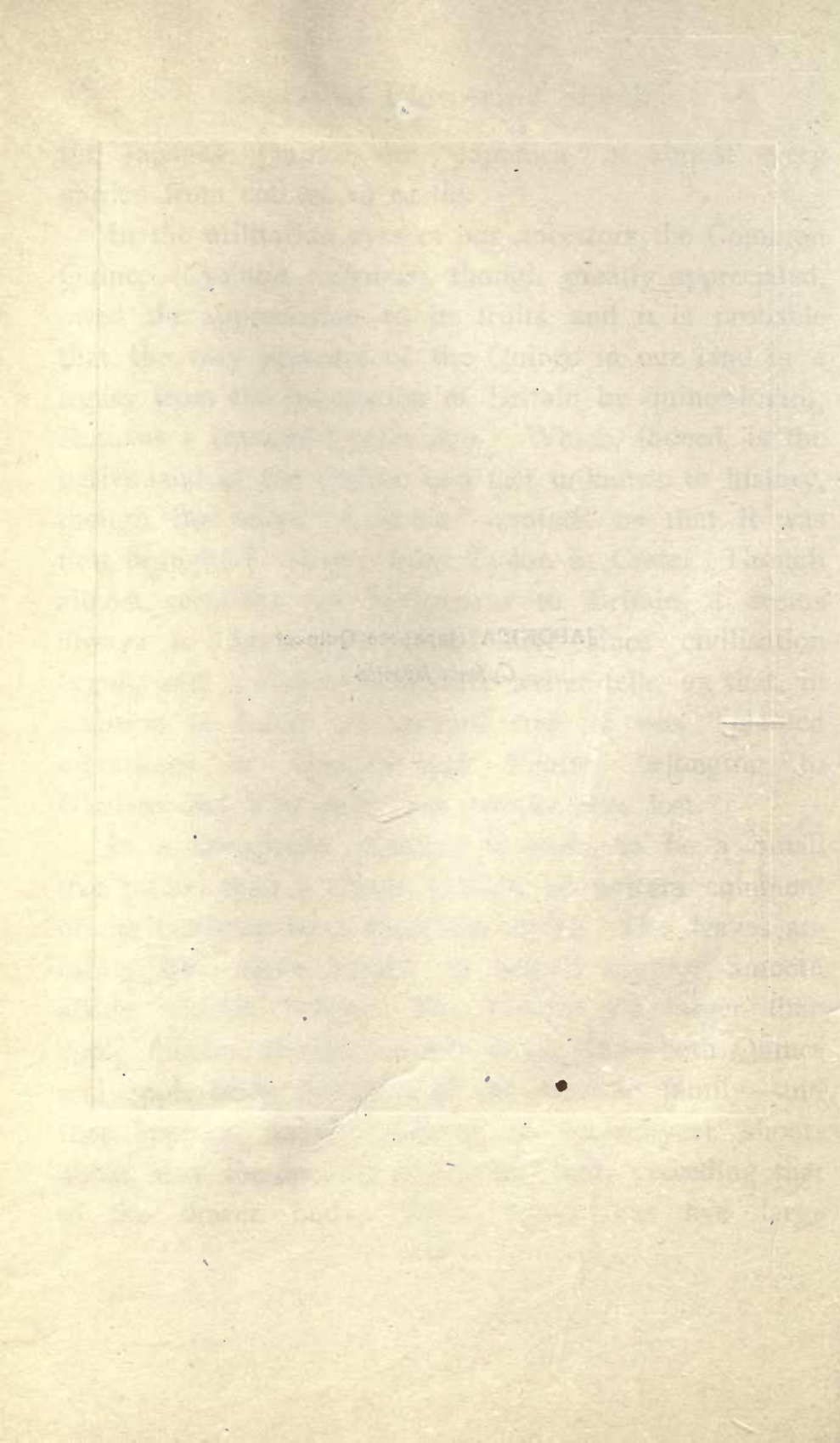
the Japanese Quince, the "Japonica" of almost every garden from cottage to castle.

In the utilitarian eyes of our ancestors the Common Quince (*Cydonia vulgaris*), though greatly appreciated, owed the appreciation to its fruits, and it is probable that the very presence of the Quince in our land is a legacy from the occupation of Britain by quince-loving Romans a thousand years ago. Which, indeed, is the native land of the Quince is a fact unknown to history, though the name "Cydonia" reminds us that it was first brought to Greece from Cydon in Crete. Though almost certainly not indigenous to Britain, it seems always to have been found here since civilisation began, and a sixteenth century writer tells us that, in addition to being an orchard tree, it was "planted oftentimes in Hedges and Fences belonging to Gardens and Vineyards"—a practice now lost.

In a favourable situation it tends to be a small tree rather than a shrub, though all writers comment on its tendency to a shrub-like habit. The leaves are rather like apple leaves, of simple outline, smooth above, whitish below. The flowers are larger than apple flowers, though on the same plan—both Quince and apple being members of the *Rosaceæ* family—and they appear, usually solitary, on second-year shoots about May, the opening of the leaf buds preceding that of the flower buds. Each flower has five large

JAPONICA (Japanese Quince)

Cydonia japonica



Univ.
CALIF.



The Quinces

recurved sepals, five pink and white beautiful petals, twenty stamens of three different lengths, and a number of styles, whose height is less than that of the shortest stamens. Hence their receptive tips—the stigmas—usually get fertilised by the pollen of the adjacent anthers. However, as the flower opens and exposes these stigmas a trifle before the stamens shed their pollen, there is a chance of cross-fertilisation being effected by the many hive and humble-bees that fly from flower to flower.

The fruits, ripe in October, are pear-shaped (though there is also an apple-like variety) and the size of largish pears. They are coated with a waxy film and are of a beautiful golden colour. (Were they the Golden Apples of Hesperides?) They are characterised by a strong odour which Gerard declared to be “hurtfull to the head.” When young they are coated with white “cotton” or down, which down the herbalists used to boil and apply to plague sores. Further, since, as Culpepper says, “Old Saturn owns the tree,” this woolly coat “laid as a plaister, made up with wax brings hair to them that are bald and keeps it from falling if it be ready to shed.” “Marmelade,” a word derived from Marmello, the Spanish name of the Quince, was originally the preserve, or “Cotiniat,” made from Quinces. To every pound of “faire” Quince add a pound of sugar and a pint of water,

Beautiful Flowering Shrubs

strain and boil again till stiff, then "as it cooleth p thereto a little Rose water and a few grains of Mu mingled together, which will give a goodly taste to t Cotiniat. This is the way to make Marmelade," sa Gerard in Queen Elizabeth's day.

The gay Japanese Quince, "Japonica," has on been known about a century. Sir Joseph Banks, t botanist, found it in Japan in 1796 when he w making a voyage round the world with the renown Captain Cook, and it was first figured in the *Botanic Magazine* of 1803. The Japanese name for it *Alsuma Kaido*, or *Buké*. Most common as a creep "which must have been designed by the Creator's s to wander across a mullioned window or to cling abo a Jacobean door,"* it is perhaps even more attracti a shrub set in isolation on a lawn in free developmen Its gaiety begins in the very dead of the year—alwa supposing that it is in a sunny, moderately shelter spot—for in January its buds are just beginning unfold into rose-scarlet blossoms, whose brilliancy enhanced by a close ring of half a hundred yell stamens. Since the leaves are not yet putting in appearance, late February days often see a blaze colour visible from afar, all the more attractive in th there is no background of green to dilute the viv ness. This brilliant blossoming in early spring day

* Hubert Bland, "With the Eyes of a Man."

The Quinces

and the fact that flowering continues freely until June, while odd flowers may be found throughout the whole year, constitutes one of the chief attractions of the shrub.

The flowers appear in small clusters of two to eight. The end of each flower stalk is a miniature crater, round the edge of which are set five sepals and (alternating) five petals. On the crater's inner slopes are set five rings of ten stamens apiece whose heads are free to nod. These stamens offer an abundance of pollen to eager pollen-collecting bees and flies, the outer ring commencing first to discharge their contents and the other rings following in due succession. On the base of the "crater" is the seed-case with five locules, a number of seeds being in each locule. Five long columns—the styles—rise from it; each carries two lateral lobes—stigmas—whose function it is to catch the fertilising pollen.

A circular reddish disc, forming almost a roof to the ovary, projects from the crater's sides just below the stamens, and pours out honey lavishly into the crater; it is the nectar gland of the flower.

But this honey lies too deep for hive bees to reach it; their proboscides are only some 6 mm. long, while the honey is at double that depth, so they have to content themselves with pollen, the secondary object of their desire. The most successful visitor to the

Beautiful Flowering Shrubs

Japanese Quince is the bee *Anthophora pilipes*, and this may often be seen poising on the cluster of styles and guiding its fine long proboscis along one of them to the nectary, which it can easily reach. The stigmas are mature a little before the stamens, and either the pollen-seeking hive bees or the nectar-sucking *Anthophora pilipes* usually effect cross-fertilisation, or even self-fertilisation as the flower grows older and stamens and styles are functioning together. Each little group of flowers—or “inflorescence”—lasts three to four weeks, an individual flower ten days to a fortnight.

Though most of the flowers are fertilised in this country, not all the fruit ripens. This is especially the case if the water supply is at all scanty. An apple-like fruit, it is of full size when about two inches in diameter in September, and by October, when it falls, is fragrant, waxy-coated and a golden-yellow, but inedible, though sometimes made into a not very successful preserve. A number of ovoid seeds are embedded in the hard flesh. As all the fruits necessarily fall just below the tree, it is suggested that pigs might perhaps be Nature's agents intended to take the fruit from the ground and thus disperse the seeds.

Many beautiful varieties of the Japanese Quince are known, their chief distinction lying in the colour

The Quinces

of their flowers; thus *alba* has white flowers, *candida* cream, *rosea* pink flowers, *cardinalis* rich crimson, and *gardenalis* large, vivid red flowers. The common form is usually differentiated as *Cydonia japonica camellæfolia*.

The Chinese Quince (*Cydonia sinensis*) is similar but inferior to the Japanese Quince. Its blossoms are rose-red, while its foliage is bronze coloured in the spring.

Maule's Quince *Cydonia* (or *Pyrus*) *Maulei*, is a particularly desirable shrub. It is not so large as the Japanese Quince, with more slender branches which tend to spread, and smaller leaves, but it atones for this by an absolute plethora of blossoms. Its young twigs will be a solid mass of brilliant scarlet flowers about April, to be followed in the autumn by crowds of almost as brilliant orange-coloured fruits the size of small apples. These fruits have a spicy fragrance as well as great beauty, a beauty that persists, too, for they cling long to the branches; a delicious preserve can be made from them.

There is an element of tragedy about the shrub, however. It was introduced into England from Japan, somewhere in the seventies, by a Mr. Maule, of Bristol, who was so struck by the possibilities of the shrub both in flower and particularly in fruit, that he laid out many acres of his land for its cultivation.

Beautiful Flowering Shrubs

Unhappily the venture was not a success, and the worry of it all is said to have hastened his death.

The shrub is quite hardy and it is sometimes employed to form excellent hedges on account of a spininess about its branches. It is known in a number of varieties of marked distinctiveness. Thus *C. m. alba* has longer leaves and tiny yellow-white flowers, while *C. m. superba* has particularly large rich-red flowers, and is a most desirable shrub.

Soil and Cultivation.—The Quinces will thrive in most soils, but loam is preferable, and to be seen at their best they should have plenty of sun. They are propagated either by seeds or cuttings.

VI

ROSEMARY

Rosmarinus officinalis

STIFF stems rising up straightly like so many towers, clothed with leaves so narrow as to be almost needle-like, showing swift colour contrasts of dark green and grey, stems and leaves that persist unchanged, season in, season out, winter as well as summer; small flowers that add an unobtrusive tinge of purple to the upper part of the branches in spring-time and autumn—that is the Rosemary. But not the whole Rosemary, nor yet even the most striking part of it; this honour is reserved for the fragrant and refreshing scent so indissolubly associated with the plant that one cannot think of it apart from its odour.

It is a fact well established by science to-day that scent in any form more readily awakens an association of ideas than any other stimulant of sensation, that it is pre-eminently the vehicle of memory:

“sweet scents
Are the swift vehicles of still sweeter thoughts,
And nurse and mellow the dull memory
That would let drop without them her best stores.”

(*Savage Landor.*)

Beautiful Flowering Shrubs

And so "Rosemary that's for remembrance," as sad Ophelia said, and hence, too, the Rosemary is above all others the shrub of sentiment. Obviously it cannot rank among the shrubs of special beauty, though the low tones of its grey-green foliage and dull purple flowers have a quaint attractiveness, but even in these prosaic days a place will be found for it in many a garden when gayer shrubs are crowded out.

"I plant Rosemary all over the garden, so pleasant is it to know that every few steps one may draw the kindly branchlets through one's hand and have the enjoyment of their incomparable incense, and I grow it against walls so that the sun may draw at its inexhaustible sweetness to greet me as I pass." *

In olden days, when sentiment seemed more to the fore, the "Glorious Rosemaryne," was universally grown. "Being in every woman's garden," says Parkinson about the middle of the seventeenth century, in his "Earthly Paradise," "it were sufficient but to name it as an ornament among other sweet herbs and flowers in our gardens"; while Shenstone noted

"trim Rosemaryne that whilom crowned
The daintiest garden of the proudest peer."

In earlier days still Sir Thomas More wrote, "As for Rosemaryne I lett it run all over my garden wall, not onlie because my bees love it, but because 'tis the herb

* "Home and Garden." By G. Jekyll.

Rosemary

sacred to remembrance and therefore to friendship, whence a sprig of it hath a dumb language that maketh it the chosen emblem at our funeral wakes and in our buriall grounds."

Very early was this association formed with death—a very natural and inevitable association for the herb of remembrance—and over and over again we find references to the

"Dreary Rosemarye
That always mourns the dead."
(Hood.)

and the poet Gay describes the funeral of a maiden where

"To show their love the neighbours far and near
Followed with wishful look the damsel's bier.
Sprigg'd Rosemary the lads and lasses bore,
While dismally the parson walked before ;
Upon her grave the Rosemary they threw,
The daisy, butter-flower and endive blue."

Even to this day in certain parts of the country and on certain occasions sprigs of Rosemary are carried by the mourners to the graveside and thrown into the grave upon the coffin. It was also customary to place Rosemary upon the corpse, so Friar Laurence by the dead Juliet counsels

"Dry up your tears and stick your Rosemary
On this fair corse and, as the custom is,
In all her best array bear her to church,"

and a curious superstition existed that the sprig of Rosemary left in the hand of the dead would grow

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and eventually cover the body. There was an old belief, too, that its aroma preserved the dead, hence the idea of immortality was linked up with this shrub.

But it was not only at funerals that the Rosemary entered into relation with man's affairs; at weddings the "herb of remembrance" had a place, too, as Herrick tells us in Queen Elizabeth's days,

"The Rosemarie trail
Grows for two ends, it matters not at all,
Be 't for my Bridall or my Buriall."

And a very old poem addressing a bride tells how,

"Young men and maids do ready stand
With sweet Rosemary in their hand
A perfect token of your virgin life.
To wait upon you they intend
Unto the church to make an end,
And God make thee a joyfull wedded wife."*

It is on record that the wedding coronal of Anne of Cleves had sprigs of Rosemary in it.

Again, the Rosemary always found a place in Christmas decorations, centuries back, because of the belief that the Virgin Mary placed the Infant Jesus upon branches of the fragrant Rosemary. And so in an Elizabethan Christmas carol we have,

"The boar's head in hand bring I
With garland gay and Rosemary."

and Herrick recounting the dismantling of Christmas

* "The Bride's Good Morrow." The Roxburgh Ballads.

Rosemary

decorations among the ceremonies due on Candlemas Eve, says,

“Down with the Rosemary and Bayes ;

Down with the Mistletoe.

— Instead of Holly now upraise

The greener Box (for show).”

Although the Rosemary has been bound up in such intimate fashion with English life for many centuries it is not a native plant, but has come to us from South Europe, where it abounds in any locality no matter how dry or exposed. For it is what is known as a xerophyllous plant—a plant specially adapted to an environment of drought. Witness the white hairs which form such a thick coat over the tender skin and protect it from the drying, shrivelling effect of hot sun or cutting winds, and prevent undue transpiration of moisture from the tissues beneath. Witness, too, the curious and interesting structure of the leaves. When one comes to analyse it one finds that their needle shape is due to the fact that the edges of each leaf are turned back sharply so that almost the whole of the back of the leaf, all but a narrow strip, is covered by them. Thus the leaf exposes the minimum amount of surface possible, and even this back strip is covered by a white felting of hairs. It is this light felting in contradistinction to the dark face of the leaf, that gives the foliage the colour contrast characteristic of the Rosemary. Again the leaves are all set on the stem

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steeply inclined upwards, and this with a very wise purpose. When the dry winds blow through the shrub they strike upon the carefully protected backs of the leaves and press their faces on to the stem, so that the more tender portion of each leaf is immediately protected, and the full force of the breeze is received without injury by the guarded back.

The Rosemary belongs to the family known as the *Labiatae*, and has for its relatives many other sweet-scented herbs, such as the lavender, marjoram, thyme, sweet basil, mint and the pogostemon, from which the famous patchouli scent is extracted. Indeed, scent is a leading characteristic of a large section of this family, even though it may take the form of a strong and somewhat unpleasant aroma, as for instance, in the catmint (*Nepeta*) and the hedge stachys. The pale lavender-coloured flowers are in clusters of two and three at the end of the shoots. The corolla of each is irregular, yawning and two-lipped, and with two narrow side petals, outstretched like arms. Its base is held in a hoary green calyx, which is also two-lipped, three sepals being united at top and two partly below. In the corolla the top lip has two long ears, showing that it is really composed of two petals, while the lower lip curves down and then up, forming a long deep trough along which run two dark purple lines. The lower part of the corolla is a narrow tube.

ROSEMARY
Rosmarinus officinalis



Rosemary

There are only two stamens (instead of the four usually found in this family), and these stand on short filaments in the throat of the tube. At the base are four nutlets, like four little eggs, and from the centre of the four rises a long dark purple column which runs along under the upper lip and out a considerable distance beyond it, forking into unequal parts at the end. The stamens are mature before the style, hence the bees (whose affection for the flowers Bacon noted) and the wasps (who also love it) visiting the younger flowers carry off pollen with them. On their visiting an older flower they strike upon the now receptive stigma and leave at least some of the pollen grains thereon. Honey drawn by the bees from Rosemary flowers is supposed to be of particularly good flavour.

The flowers begin to appear very early in the year, and blossom is at its zenith about the end of April. The old superstition was that Rosemary blossomed on the day of the Passion of Christ. Above the flowering part of the shoot, the new shoots of the current year are flowerless. As the flowers are set close down among the leaves the shrub makes no great show, nor is it planted with any view to floral effect. Scent, foliage and sentiment are the foundation of its popularity.

Since it is evergreen and adaptable, Rosemary makes an admirable hedge, and no better one could be found for a garden where those that walk therein are

Beautiful Flowering Shrubs

given to meditation and reflection. Planted along some narrow path the gentle brushing against the leaves as one passes to and fro calls forth the Rosemary's memory-haunting aroma and forms a subconscious background for thought. And, because ever-green, the Rosemary makes its special appeal all the year round. So Perdita, welcoming the pseudo-shepherds, Polixenes and Camillo, gave them gifts of welcome of Rosemary and rue—

“Reverend Sirs,
For you there's rosemary and rue ; these keep
Seeming and savour all the winter long :
Grace and remembrance be to you both,
And welcome to our shearing.”

The scent of the Rosemary is, of course, due to a certain volatile oil that permeates its tissues, particularly those of the younger growing parts and, owing to the presence of this oil, the shrub in olden days had a high medicinal reputation and was largely grown in the gardens of the religious orders, whose care was the sick. A fourteenth century poet refers to it—

“This herb is callet Rosemaryne
Of vertu that is gode and fyne,”

while Gerard, who cultivated it in his garden in 1596, tells us that “The oile of Rosemary chemically drawne comforteth the cold, weake and feeble braine, in most wonderful manner”; and also that “The flowers made

Rosemary

up into plates with sugar, after the manner of Sugar Roses, and eaten, comfort the heart and make it merry, quicken the spirits, and make them more lively." Culpepper's Herbal, published about half a century later than Gerard's, gives high praise to this plant. "It is an herb of great use with us in these days as any whatsoever, not only for physical as for civil purposes," and then he sets forth a score of diseases or "griefs" for which it is "a sovereign help." Indeed, this might be expected since, as he asserts, "The sun claims privilege in it and it is under the celestial Ram." Not only was the oil prescribed by him but also the flowers to be eaten, fasting every morning, with bread and salt, and the dried leaves to be shredded and smoked as tobacco, or made into ointments, and the branches to be steeped in wine as decoctions. But by degrees it waned from favour, and in a Herbal of the early days of the nineteenth century it is referred to "as having obtained a celebrity which it little merits." However, a perfume made by distilling two pounds of Rosemary flowers with four pounds of rectified wine, was then popular and went by the name of "Queen of Hungary's Water," because a certain Queen of Hungary was said to have been cured of some fell disease by drinking it. Though Oil of Rosemary still finds a place in the British Pharmacopœia among other volatile flavouring oils, it is rarely used, being somewhat of

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an irritant, and it has now no other function assigned to it. Finally, reference must be made to an old proverb that asserts that "Rosemary only grows where the mistress is master," and perhaps Parkinson was having a sly hit when he spoke of it as being in "every woman's garden."

A variety of the Rosemary known as the Golden-leaved Rosemary (*R. folius aureis*), with yellow-streaked leaves, is sometimes met with, but it is rather tender and has no advantage over the common form.

Soil and Cultivation.—Rosemary will grow almost anywhere, in any garden soil that is not too heavy, but it should be planted where it gets a certain measure of sunshine. It is easily propagated by cuttings struck in a cold frame.

VII

THE GORSE

Ulex Europæus Gorse, Furze, Whin
 „ „ : *var. flore pleno* Double Gorse

NOTHING is more entrancing in Nature's garden than a Gorse common ablaze with the massed brilliancy of its flowers in late April and in the merry month of May. For there a sheet of pure gold makes a revel of colour, while the most delicious, the most spring-like of scents surges up on every breeze, wave upon wave, to bathe one in fragrance. No wonder, indeed, that when the eyes of the great Linnæus first fell on a Gorse common in full flower he, a native of a gorseless land, stood in wonder, then knelt in gratitude to the Almighty who had permitted him to see such a vision of beauty. So strong is the appeal that Gorse makes to the senses, so overwhelming the delight that lies in it, that it is nothing short of amazing that as a garden shrub it is so rare. Of course in Nature the magnificence of the general effect is largely obtained from viewing at a distance the massing of brilliant flower

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colour over a large area, and naturally in a garden, where space is circumscribed, this effect cannot be obtained, but the disability is largely overcome if the Double Gorse be planted instead of the ordinary wild form.

The Double Gorse—*Ulex Europæus*, var. *flore pleno*—is a variety that appeared suddenly in the garden of Mr. John Miller, a well-known nurseryman at Bristol, about the year 1828, and its characteristic is that its flowers are “double”; therefore each, individually, represents an enhanced spot of brilliancy. So an irregular clump of some large spreading shrub, several yards in diameter, may stand for the concentrated essence of a whole Gorse common, and its flare of colour will dominate the whole situation. It is sometimes objected that the Double Gorse is short-lived—a few years being its limit—and that considerable attention is required in the way of cutting back the branches every three or four years and then relayering if one is to keep the patch in full vigour. But a Double Gorse, well known to the writer, has lived its own uninterfered-with existence in a Cambridge garden for over twenty years, and still appears in the zenith of its day.

Gorse, however, has its definite likes and dislikes, even in the wild state, and though so common in this country and in the west of Europe generally, it is un-

The Gorse

known elsewhere with the exception of a corner of North-west Africa. Linnæus attempted to introduce it to his native land of Sweden when he returned, but his efforts met with no success, and Scandinavia, together with the larger part of Europe and the whole of the rest of the world, have no knowledge of it in a wild state.

One of the chief merits of the Double Gorse as a garden shrub is the long period of its flowering. In fact, in this respect it is second to none. Quite early in the spring it begins to put out touches of gold—

“Grey skies without a rift of blue
To-day above the trees ;
All dun and drear the woodland’s hue,
Swept by the chilling breeze.

“Only the yellow gorse so bold,
Turns every bush to molten gold,
And roofs the roughest brier brake
With gleaming shingles, flake on flake,
That fire the dim March world around.
Beauty’s triumphant o’er bare ground !
Dull skies and hedgerows empty yet,
’Neath winds the barren boughs that fret ;
But yellow gorse flames everywhere,
Making the bleakest prospect fair.”*

But mid-April is the time when the garden Gorse begins really to appear a whole patch of blazing colour; while behind the first crop of flowers an

* “The Yellow Gorse.” Edith Dart.

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infinite number of buds, big and little, bespeak an endless stream of successors. All May and a large part of June the glory continues—"a feast for sore eyes"—and even when its zenith is past it still continues to put forth a very respectable, if gradually diminishing, floral show for another two months, and is speckled with odd blossoms right into the autumn. "When Gorse is out of flower, kissing is out of fashion" is as true of the garden Gorse as of the wild Gorse, while the actual period of its zenith is longer.

In the Double Gorse the flower loses something of the butterfly-type of the wild form. In the latter there are two yellow-brown sepals and five petals, one, "the standard," being large and upstanding; two smaller ones are wings, one at each side, while two yet smaller are united to form the keel. The wings and keel interlock by ingenious hooks at the base of each, readily to be seen on dissecting a blossom. Inside the petals ten stamens, their heads all separate, have their filaments united into a tube and lie in the keel, and the ripe pollen falls out of them and collects in its tip. In the centre of their filament tube is the long slender seed-pod covered with white hairs and carrying a hooked column which also runs up to the end of the keel. In the course of nature a bee straddles the keel, whose interlocking with the wings promptly gives way, so down it goes, and up spring the

DOUBLE GORSE

Ulex europæus : var. flore pleno



The Gorse

stamens, and the floury pollen is thrown up in a little cloud with a jerk, and the visitor's abdomen gets covered by it. The stigma touches the abdomen first, however, and rubs off any pollen that may have been brought from a previous flower. Thus there is interchange of pollen from flower to flower and cross-fertilisation. If a flower be held over a piece of white paper and an explosion brought about artificially by depressing the keel with a pencil, one can see the whole process for oneself. Further development follows on fertilisation. The sepals, petals and stamens wither and fall, the pod enlarges and ultimately blackens. When quite ripe it suddenly splits with a "crack," and in the release and coiling of the pod-halves the row of tiny black seeds within are shot out and dispersed.

In the Double Gorse the stamens are in all stages of transition into petals, hence the tufted appearance of the centre of the flower. Some are practically transformed, others are barely out of the staminal form and even hint at anthers. The pod in its white hairy coat is intact, but even its long column has a tendency to flatten, petal-like, in sympathy. Of course there is no future for a flower of this kind. It merely pleases the eye of man, and since it cannot fulfil its proper function of producing fertile seed, it has no place in the scheme of Nature.

The foliage remains true to type—

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"Approach it not

For every blossom has a troop of swords

Drawn to defend it."

In the Gorse there are no leaves in the ordinarily accepted sense of the word, for they have all been turned into hard, sharp spines. The only time when one sees a normal leaf on the plant is in its earliest infancy. It is a very interesting point that the first leaves that are produced after the emergence from seed are formed of three tender leaflets, for the Gorse originally started at peace with the world, but the exigencies of existence, its place on dry commons liable to be browsed over by hungry animals where sustenance is scarce, has thrown it into a state of perpetual defence, and caused it to eschew any attempt at juicy foliage after the first immature effort of a seedling. Henceforth it produces nothing but stiff spines. Its very name "Gorse" has reference to this, for it is derived from a Gaelic word signifying "a sharp point." "Gorst" and "Goss" are provincial corruptions that are often heard. The names "Furze"—"Vuzz" in Devon parlance—and "Whin" are also used to denote the plant, their exact significance being rather uncertain.

A great advantage of the Gorse as a garden shrub is that it is evergreen both as regards spines and branches, and though there is no foliage effect, as in the laurel or the escallonia, there is none of the bare-

The Gorse

ness that is seen in deciduous shrubs such as spiræas and lilacs. The water-pores, that in the majority of plants are located in the leaves, are here placed in the long furrows of the stem and protected by hairs from swamping by the rain.

Soil and Cultivation.—Gorse should be grown on a dry poor soil in the sunniest possible aspect. Give it rich soil and it deteriorates, becomes rank in growth and no longer puts forth its whole energy in golden flowering. The Common Gorse should be grown from seed sown in position, but as the Double Gorse bears no seed it must be propagated by cuttings taken late in August. These should be struck in a cold frame and kept there till the following spring when they will have rooted. Transferred to pots they can then be planted when they are of sufficient size. It is, however, not altogether easy to get the Double Gorse to strike from cuttings, and it grows and develops more slowly than the Common Gorse. It is also not easy to transplant.

VIII

ANDROMEDA AND ITS ALLIES

<i>Andromeda polifolia</i> . . .	Moonwort, Wild Rosemary, Pearlwort
<i>Pieris floribunda</i> , or <i>Andromeda</i> <i>floribunda</i> . . .	Fetter-bush
„ <i>formosa</i> , or <i>Andromeda</i> <i>formosa</i>	
„ <i>Mariana</i> , or <i>Andromeda</i> <i>mariana</i> . . .	Stagger-bush
„ <i>japonica</i> , or <i>Andromeda</i> <i>japonica</i> . . .	Japanese Andromeda
<i>Pernettya mucronata</i>	

THE TREE HEATHS

<i>Erica arborea</i> . . .	Tree Heath
„ <i>mediterranea</i> . . .	Mediterranean Heath

UP in the boggiest part of the heather moor, where the cross-leaved heath (*Erica tetralix*) dominates, and the little sundew (*Drosera*) and the butterwort (*Pinguicula*) catch and absorb unwary insect life, is found one of our few native shrubs, the Moonwort or Wild Rosemary, *Andromeda polifolia*. The peat is thick here, and formed almost entirely of the bogmoss, sphagnum, which holds water like a sponge, with an overflow into tiny pools, and just on the edge

Andromeda and its Allies

of these pools this little shrub flourishes and hangs out small clusters of pinkish-white, heath-like bells. Linnæus often saw it thus in Lapland, and so he gave it for its botanical name the pretty title of *Andromeda*, in memory of the Greek myth. "This plant is always fixed on some little turfey hillock in the midst of the swamp," he wrote, "just as *Andromeda* herself was chained to a rock in the sea, which bathed her feet as the fresh water does the roots of this plant."

It is an attractive little shrub, about two feet, or even three feet high, with wiry branches, and leaves remarkably like those of the *Rosemary*, long, very narrow, with smooth dark-green surface and white felted back, over which the margin curls. Hence the plant's name "*Wild Rosemary*," though botanically it has no affinity with that fragrant shrub and is, in fact, a member of the *Heath* family—*Ericaceæ*—with other members of which it is so often associated in Nature. These leaves are specially designed to minimise the giving off of watery vapour by the plant, for, living in a "sour" soil, the roots can absorb little of the abundant water around them.

The five or six pinkish-white flower bells set in little clusters, recall vividly the close flower clusters of the cross-leaved heath, and their daintiness well accounts for another pretty name of the plant, "viz. "*Pearlwort*." Each hangs on a short, pure white

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stem. Its base consists of five tiny white sepals pink-tipped, and of a bell-like corolla which narrows at its mouth into a small pentagonal opening, through which can just be seen the green knob of the stigma—the end of the column from the ovary. A lens shows further that this knob has five rounded bosses upon it.

Some white hairs just inside further fill in the opening, with the double purpose of protecting the honey secreted at the base of the seed-case within, and keeping in the pollen that falls from the anthers. It is not till the bell corolla is slit up that one discovers how quaint these anthers are. There are eight of them, and the end of each carries two horns curving upwards and outwards into the bell; thus the sixteen horns form a radiating barricade about one-third of the way up. Now an anther opens by an oval gap at its tip, but since all tips are at first pressed together, the pollen within cannot fall out. However, when a bee or other insect comes clambering among the blossoms in search of the honey away high up in the bell, it pushes its proboscis in and strikes on the barricade of horns, and consequently disturbs the anthers to which they are fixed; so the latter are pressed apart and the pollen falls on to the intruder. Previous to this the sticky shining bosses of the stigma have annexed any pollen that the bee has brought with it from a previously visited flower. Humble-bees, particularly

Andromeda and its Allies

Bombus lapidarius and *B. muscorum*, are great visitors to this plant, while butterflies also pay it attention.

The fruit is a dry capsule containing several seeds that eventually escape by four openings at the mouth.

But this native shrub is not the usual garden representative of its class; the foreigners, such as the Japanese Andromeda (*Pieris japonica*), or the North American shrubs *P. floribunda*—the Fetter-bush—and *P. Mariana*—the Stagger-bush—far surpass it in general beauty. They are all built on bigger lines, and the sprays of their white, bell-like flowers closely recall, though on a larger scale, the delicate graceful flower spikes of the lily of the valley. Indeed, an authority declares that the Fetter-bush is absolutely indispensable in a garden. This is the plant of our illustration. It was sent to England in 1806 by John Lyon, a Scotsman, who was an indefatigable collector of North American plants, and who introduced more plants from that country into this than perhaps any other man has done. He died in North America in 1818, a victim of a dangerous epidemic contracted “amidst those savage and romantic mountains which had so often been the theatre of his labours.” One of this same group of plants, *Lyonia ligustrina* (sometimes known as *Andromeda tomentosa*), commemorates him.

In *Pieris* (or *Andromeda*) *floribunda* the leaves are

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thick in texture with dark glossy-green surface and paler backs, and black hairs are dotted about them. The flowers come out in March and April and are set some twenty or thirty together, in rather stiff, erect spikes at the end of the branches. It is a shrub that is neat and compact in growth, an evergreen bush that may grow to the height of a man, and be even double that in width.

Pieris (or *Andromeda*) *japonica* is still more beautiful, but the value of its greater beauty is somewhat discounted by its lesser hardiness. The spikes, four or five inches long, of pure white blossoms droop gracefully instead of being held stiffly erect, and the individual blossoms are larger. They are produced at the ends of the branches, and when the shrub is at its best they cover the shining dark foliage as with a snowy mantle. It is, as its name implies, a Japanese shrub.

The third species of *Pieris* that we find in our gardens is *P. formosa* (or *A. formosa*), from the Himalayas. This is perhaps most beautiful of all, and as it flowers a little later—May instead of March and April—it is less likely to be cut by frosty nights. The flower spikes are often half a foot long, and they appear, a dozen to twenty together, on the end of the previous year's growth, each carrying about a dozen bells. In the spring this shrub, growing in a sheltered

FETTER BUSH

Pieris floribunda

THE
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Cornish garden, was a veritable delight of harmonious tones, for the young foliage was richly ruddy, the foliage of the previous season a dark glossy green, while thick clusters of the sprays of white bells overtopped all and gave a note of distinction. It is rather surprising that in this country it cannot be ranked among the very hardy shrubs, for it flourishes in the Himalayas at a height of six thousand feet. It is also a native of China.

A number of allied shrubs have, at various times, passed under the generic name of *Andromeda*, but they are now differentiated into separate genera, most of which have also received classical names. Besides *Pieris*, which name signified the Muses in general, there is *Cassiope*, after the mother of *Andromeda*, *Zenobia*, after the Queen of Palmyra, *Cassandra* the daughter of Priam, and *Leucothæ* a nymph beloved by Apollo, all of which are shrubs finding an occasional place in our gardens. But none of these is so valuable as those shrubs of which a more detailed account has already been given.

Pernettya mucronata is another shrub of the Heath family of which mention must not be omitted. A native of the extreme south of South America, it is very hardy, and though it is gradually coming more and more into favour, it might with great advantage be grown far more largely than it is. It is true its little

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white flowers are nothing, but the fruit which is borne in great abundance is charming, for the whole shrub is studded with semi-translucent berries of the most beautiful hues, a rich rose-pink being, perhaps, the most noticeable. "The Pernettya," says Mr. Bean, "is about the only shrub that has been cultivated and selected with a view to the beauty and variety of its fruit apart from its edible qualities. In Kew, the fruits are never touched by birds, although in some gardens they are said to be stripped in winter, possibly by pheasants." This shrub's name was given to it by M. Gaudichaud to commemorate a certain Dom Pernetty, a traveller who wrote an account of a voyage to the Falkland Islands, "a work remarkable for its interest as well as for its candour and exactness," said Dr. Lindley. Dom Pernetty noted this shrub specially for its hard-pointed, leathery leaves; it was "*Bruyère à feuilles pointues*" to him, and this characteristic is embodied in its specific name, *mucronata* (*mucro*—a sharp point). Its seeds were first brought to Great Britain in 1823, having been collected at Valdivia by a Mr. Bridges, but little notice was taken of it. About thirty years ago an Irish nurseryman began specially cultivating it, and he produced some beautiful varieties carrying diverse-hued fruit that evolved fresh interest in it.

Its flower differs from the usual type of *Erica*

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flower in that its anthers have no horns, but split into four bristles at their tip.

Tree Heath.—With the many Heaths in general it is no part of this chapter to deal; they do not rank among what are properly considered to be garden shrubs. Exception must be made, however, for—

1. The Tree Heath, *Erica arborea*, which carries dense clusters of fragrant white flowers.

2. The so-called Mediterranean Heath—*Erica mediterranea*—which is, nevertheless, a native of Co. Galway in Ireland and in the regions round the Bay of Biscay and not of the Mediterranean at all. This has rosy-hued flowers (though there is a variety with white flowers). Both of these shrubs grow six feet and upward in height and are evergreen, with the usual line-narrow leaves characteristic of all Heaths. They are hardy, the last named especially so, and their light feathery foliage and clustered flowers are great additions to a spring garden.

Soil and Cultivation.—All these shrubs demand a peaty soil, but with some the demand is more imperative than with others. The Andromedas will indeed only flourish in very damp peat; the others generally have a strong preference for peat, but will also grow very fairly well in moist loam with decayed leaves added. All love moisture and a cool bottom. Indeed, they rank with their relatives Rhododendrons and

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Kalmias as to garden conditions. While both the Andromeda and the *Pieris* genera prefer shade and do well under trees, the Pernettya and the Heath crave sunshine as well as moisture at the roots.

All can be propagated by seed, by division and by cuttings.

IX

AZARA

Azara microphylla . . . Small-leaved Azara

THE Azaras, like the Darwinian barberry, the embothrium or fire bush, and the escallonias, are a Chilian contribution to our gardens. They are, for the most part, only moderately hardy, and are desirable for their evergreen foliage rather than for their flowers, the species *Azara microphylla* being practically the only one that is at all well known in gardens in this country. The genus was so named in honour of a certain Joseph Nicholas Azara, a Spanish scientist, who specialised in botany, and the specific name, *microphylla*, of the particular shrub in question, refers to the fact that its leaves are extremely small.

This Azara is usually planted against a wall, or set to cover a porch, and perhaps few shrubs form a better arch; nevertheless, the shrub is seen to best advantage when it is allowed free development as an independent bush. Such a one, now before the writer, stands in an angle of the house, sheltered from the north and east winds. It is twice as tall as a man

Beautiful Flowering Shrubs

and is a most delightful shrub, unusually elegant for an evergreen, with lissom, fine spray-like branches that droop gracefully. An impression of lightness is given by the tininess of the oval leaves, which are set in pairs upon minute stalks in such a way that on each branchlet they all lie in the same plane, giving rather the general appearance of the fronds of a maidenhair fern. It is curious that the leaves in each pair are not exactly alike, their outline is slightly different and one is darker than the other.

The tiny yellow clusters of flowers, that are borne in such profusion at the ends and on the under sides of the branches and often half hidden from sight, are yellow from the four stamens that project from each minute flower and not from any yellow petals, for the flowers do not possess such, each blossom just consisting of a green, four-lobed calyx, four fleshy flattened glands, four yellow stamens, and a seed-case with a short, blunt column on top. The filaments of the stamens are flattened and the anthers slit on their outer side to allow the fertilising pollen to escape. But though the clusters are half hidden, they yet reveal their presence unmistakably, for they throw off a most delicious scent, reminding one of vanilla. It is in April that the myriads of these minute flower clusters give a transient hint of colour to the green of the branches, but the blossoming is soon

SMALL-LEAVED AZARA

Azara microphylla

Flowering Currant Shrub

The flowering currant shrub is a small, bushy plant with dark green, serrated leaves. It is known for its showy, bell-shaped flowers that are typically white or pale pink. The shrub is native to Europe and Asia and is commonly cultivated as an ornamental plant in gardens and parks. It is also valued for its fruit, which is a small, round berry that is often used in jams and jellies.

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Azara

over, though the touch of colour is renewed and emphasised in the autumn, when a host of little orange-red berries take the place of the flowers.

The Azaras belong to the small and little-known family *Bixaceæ*, their only notable relative being the *Bixa orellana*, which gives the orange-red colouring often used for staining the outside of cheese. There is no representative of the family in the British flora, its nearest allies being perhaps the rock-roses (*Cistus*) and the violets.

Azara microphylla was reported by Captain King at the beginning of the eighteenth century as growing in the province of Valdivia at the foot of the Andes, but in 1832 Loudon definitely says that it was not then known in the gardens of Europe. Sir Joseph Hooker also reported finding it when he visited Chile, but it was not introduced into British gardens until 1873, when it was sent here by Richard Pearce, who was then out in South America collecting for Messrs. Veitch. It was to the same collector that we also owe the attractive little *Escallonia philippiana*.

Soil and Cultivation.—A fairly dry, light loam is the best soil for an Azara, and, except in the milder parts of England, a sunny position sheltered from the north and east winds is essential. It is propagated by cuttings of ripened wood struck in a gentle heat.

X

KERRIA, OR JEW'S MALLOW

Kerria

<i>Kerria japonica</i>	.	.	.	.	Jew's Mallow
"	"	:	<i>var. flore pleno</i>		Common double-flowered Jew's Mallow

THE cottager's shrub. In no other garden is it found so consistently as in his, and no other shrub is cultivated by him half so assiduously. Perhaps this is due to a certain quaint neatness and primness about it, perhaps also to the fact that being thin stemmed and lightly foliaged, it is not greedy, aggressive or unduly obtrusive in a small space.

In its native home—Japan—it is prevalent both wild on the mountains and cultivated in gardens, but when, about 1700, it was first brought to England, it came in its cultivated double-flowered form—the form we now know as *Kerria japonica flore pleno*—where the blooms are thick little rosettes of orange-yellow petals, and to this day it is this cultivated variety that is the common *Kerria* of the cottage garden. At first

Kerria, or Jew's Mallow

it was treated here as a greenhouse plant and coddled with extra warmth, and not for some time was its hardy independence in this climate realised. Its yellow rosettes, too, puzzled botanists, and it was classed variously as a bramble, a spiræa—"Spirée du Japon"—in the rose family, and as a member of the genus *Corchorus* in the mallow family, the last being the class finally settled upon for it at that time. Hence it is sometimes known as "Jew's Mallow," yellow being the Jew's colour, and our other mallows being white, red and pink. Not for a century and a quarter was the shrub known in England in its natural simple form, though botanists had somewhat earlier received a hint of its existence in a solitary specimen of a twig sent from Japan by the botanist Thunberg to his friend the great Linnæus. But from an examination of that solitary example, De Candolle, the French systematic botanist, saw enough to know that it was not a mallow and to classify the plant in a genus *Kerria* all to itself in the great family of the roses—*Rosaceæ*. And he called it "*Kerria*" to commemorate the work and devotion of William Kerr, a gardener at, and a plant collector for Kew Gardens, who went out to Ceylon to take charge of the Botanical Garden at Colombo, and within a couple of years died there in 1814.

The single-flowered *Kerria* was sent to England in 1835, and bloomed the following year in the Chelsea

Beautiful Flowering Shrubs

Botanical Garden ; but, curiously enough, though more graceful and flowering longer than the common double form, it has never become really popular here, its flowers, though daintier, being not quite so showy.

The shrub grows to the height of five to eight feet, or even more under favourable circumstances. The thin branches are coated with the greenest of barks ; the wood is soft and not durable, and in Japan the pith is used to fashion tiny imitations of buds, flowers and so forth which are floated in cups of *saké*. The leaves are stalked with simple blades whose edges are cut into great unequal teeth. In certain varieties of the plant, e.g. *K. i. aurea variegata*, they are variegated and show white, yellow and pale green colouring, and this mottled appearance—punctuated by the orange-yellow flowers—produces a very gay shrub. Since the leaves in the *Kerria* are deciduous, it is, however, only a summer shrub. The tendency that it sometimes shows to revert to ordinary green leaves should be sternly repressed by at once eliminating such shoots.

The flowers come in May. In the single form they are of the ordinary rose type with five sepals, five petals, many stamens, and five to eight small round seed-cases topped each by its column. The plant rarely fruits in this country. In the double-flower form, of course, the majority of stamens become petals and the type form is lost.

DOUBLE KERRIA

Kerria japonica : var. flore pleno

Univ.
Calif.



Kerria, or Jew's Mallow

Although the Kerria is usually put as a climber or to grow by a wall, it is seen, like so many other plants—the japonica, for instance—to even more advantage as a bush. Since it is not a very solid individual, it serves admirably in the foreground of a shrubbery. It is perfectly hardy in all but the most exposed positions. It also makes good hedges, either alone or mixed with stiffer shrubs, such as flowering currant and lilac, the greenness of its leafless shoots giving a trellis effect in winter, and being an additional recommendation. In its native country it is frequently grown as a hedge.

Soil and Cultivation.—The Kerria is not particular in its requirements and will thrive in good loam or in poor sandy soil. It is usually propagated either by layers or by cuttings (taken preferably in June or July), or the whole shrub can be divided. It requires little attention beyond, perhaps, a little pruning of the old wood after flowering.

WHITE JEW'S MALLOW . *Rhodotypus kerrioides*

The White Jew's Mallow—a pretty hardy shrub remarkably like the ordinary single Jew's Mallow in all but the colour of its blossoms—is not, however, a Kerria, but as its botanical name, *Rhodotypus kerrioides*, implies, a member of the *Rhodotypus* genus in the

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same family. The distinction lies in the fruit, that of *Kerria* being little, hard and dry, and that of *Rhodotypus* being of the cherry type. It is also a native of Japan, and its habit and propagation are similar to those of *Kerria*.

XI

THE LAURELS

<i>Prunus laurocerasus</i>	.	.	Cherry Laurel
„ <i>lusitanica</i>	.	.	Portugal Laurel

THE Common Laurel ranks with the privet, the box and the aucuba as among the commonplaces of our garden. Undoubtedly some merit can be denied to none of these shrubs, least of all to the Laurel, but their ubiquity is a pity. It denotes lack of imagination, it starves our garden of colour and brilliance, and it prevents other and worthier shrubs from finding a footing. In its place, however, a place that should be strictly limited, the Common Laurel must claim our admiration. One cannot deny the felicity of the poet's lines "To a Favourite Laurel."

"There is a solemn aspect in thy shade,
A mystic whisper in the evening gales
That murmur through thy boughs."

Its heavy, glossy foliage—those leathery leaves off whose shining surface the soot of a town is so easily swept by a passing shower—makes it eminently suitable to fill in shaded nooks and screen unsightly corners in

Beautiful Flowering Shrubs

town gardens. A sort of sombre magnificence, too, attaches itself to a Laurel hedge or Laurel-covered bank bordering, say, some sweeping drive to a mansion. It is a shrub which seems to play the part of "heavy father" on the stage of shrub life. As an individual it is assertive and dominating; its greedy, searching roots in their vigorous onslaught absorb all the nourishment in their neighbourhood, to the detriment of any unhappy neighbour, while the thick texture of the leaves and the impenetrable solidity of their united front to the sun's rays, successfully prevent any plants in the background receiving their necessary and due meed of light. Hence the Laurel planted in a shrubbery or among other plants is a distinctly unfriendly neighbour. But planted in its rightful place alone, where it can have room and be given full scope for its fast-growing limbs, and not be cropped like a poodle, and allowed to produce freely its spikes of white flowers, so attractive against the dark, shining background of the leaves, then it is a shrub of which to be proud. Really, it is a tree rather than shrub when allowed free play, reaching a height of thirty-five to forty feet, with a great trunk and spreading boughs, and it is a pity that there seems to be a conspiracy among gardeners to cramp and cut it to the dimensions of an ordinary shrub.

An interesting feature of the leaves are some small

The Laurels

glands that can be seen, sometimes one pair, sometimes two pairs, at the base of the back of the blades. A peculiar flavour, the flavour of almonds and plum kernels, can be detected in the leaf tissues on biting them. This is due to the presence of hydrocyanic acid—the dreaded prussic acid—and in any quantity these leaves would be undoubtedly poisonous, but in small pieces they provide the housewife with a cheap flavouring for custards and puddings, the practice being to boil a piece of a leaf in the milk or water. At times a cordial made from the leaves has been substituted for true “Kirsch,” which, of course, is made from the cherry, and a writer a century ago says that it was “much in use among our drinkers of drams, and the proportion they generally use it in has been one part of laurel water to four of brandy.” But about this time the attention of the Royal Society was drawn, by a series of experiments made by an Irish doctor, to the grave danger attending the drinking of Laurel water, and the fashion for it went out. Dogs and other animals have undoubtedly been killed by drinking water in which a number of these leaves have been lying. Some gardeners have found in Laurel leaves a very valuable insecticide. They put the plant or the plants affected into a box, then well bruise a number of these leaves with a mallet, and quickly introduce them also into the box and close it. The box should be air-tight. The

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leaves, decomposing, give off the hydrocyanic acid, and the insects are killed. It is said that caution is needed, or the plants may share the fate of the insects if too long exposed to this fumigation. The leaves, powdered, produce considerable sneezing.

The spikes of white flowers, some four to six inches long, hang somewhat obliquely, and consist each of an extraordinarily thick fleshy stalk, on which are set a number of short-stalked, dull-white blossoms. These are of the rose type, for the Cherry Laurel is a member of the rose family, *Rosaceæ*, and has no affinity with the true Laurel family—the *Lauraceæ*—to which sweet bay belongs. Each blossom consists of a cup, whose margin carries five small green lobes. This represents the end of the stalk plus the sepals. Upon and around it are set five dull-white petals, broad and arching at top, but narrowing into a fine attachment below. Within the petals, still on the cup margin, is a ring of many stamens, which in the bud and earliest flower stages are bowed well over with their heads right down in the cup. As the flower matures they gradually raise themselves and stand erect. At the bottom of the cup and in the centre is the seed-case, which tapers up into a thickish column topped by a substantial knob. The flowers are “out” in April and May, and are largely visited by flies and beetles, who always appreciate a hydrocyanic type of

The Laurels

scent. The oval, dark-purple fruit with its solitary stone is very like a small cherry—hence the common name of the plant, Cherry Laurel—and its specific name—*Laurocerasus*. But of course the fruits are arranged in grape-like clusters on the thick central stalk, and do not droop on long single stems as in the cherry.

The Cherry Laurel was brought into England in 1629, and in 1636 Johnson's Gerard tells us, "It is now got into many of our choice English gardens, where it is well respected for the beauty of the leaves and their lasting or continuall greennesse." The same authority also tells us that "it was first sent to Clusius from Constantinople, and that by the name of *Trapezuntina dactylus* the Date of Trapezon: but it hath no affinitie with the Date." (Clusius was a "learned, diligent and laborious Herbarist," who was born at Arras in 1526 and died at Leyden 1609. He travelled widely in Spain and Austria, and wrote largely about plants on his own account, and translated also the works of others.) This plant is a native of the nearer East—Thessaly, Bithynia, the Caucasus, Persia and the Crimea.

A large number of varieties of this shrub have been evolved by nurserymen, the shape of the leaf being their usual distinguishing feature; for instance, in the particularly hardy variety, *caucasica*, the leaves are

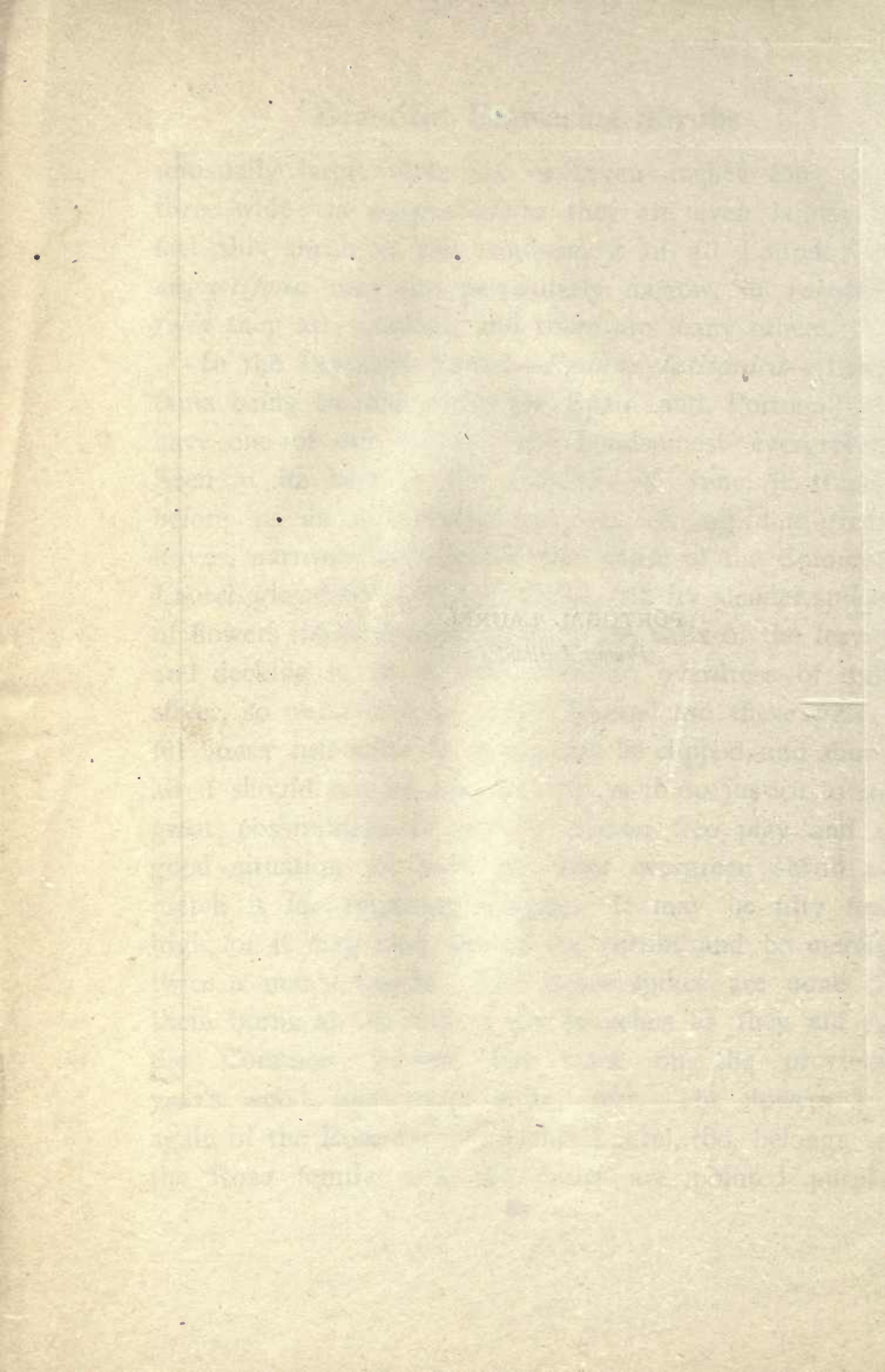
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unusually large, often six or seven inches long and three wide; in *magnoliæfolia* they are even larger, in fact this shrub is the handsomest of all Laurels; in *angustifolia* they are particularly narrow, in *rotundifolia* they are rounded, and there are many others.

In the Portugal Laurel—*Prunus lusitanica*—(Lusitania being an old name for Spain and Portugal) we have one of our largest and handsomest evergreens. Seen at its best in the sunshine of June, it stands before us as a veritable tree, its shining dark-green leaves, narrower and darker than those of the Common Laurel, gleaming in the sunlight, and its slender spikes of flowers rising straight up from the axils of the leaves and decking it, as it were, with an overdress of dull silver, so numerous, so closely packed are these graceful flower racemes. It should not be clipped, and above all it should not be crowded if it is to do justice to its great possibilities of beauty. Given free play and a good situation we have no other evergreen shrub to match it for imposing dignity. It may be fifty feet high, or it may rank among the shrubs and be merely twice a man's height. The flower spikes are none of them borne at the end of the branches as they are in the Common Laurel, but come on the previous year's wood, and stand quite erect. The flowers are again of the Rose type—for this Laurel, too, belongs to the Rose family, and the fruits are pointed purple

PORTUGAL LAUREL

Prunus Lusitânica



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The Laurels

berries, much beloved by the birds, who will quickly strip a tree of them. The Portugal Laurel has no glands on the back of the leaves, and the shrub does not carry the aromatic oils that we find in the Common Laurel.

Though the Common Laurel is hardy, the Portugal Laurel is still better adapted to bear cold, and has been known to face 32 degrees of frost with equanimity. This is all the more remarkable when we recollect that the shrub came to us from Portugal, or perhaps from Madeira, via Portugal. It made its first appearance here in 1648, some twenty years later than the Common Laurel. Of this, too, there are now several varieties grown in our gardens, viz. rather tender *azorica*, with the leaves longer than any other variety; *myrtifolia*, with quite small leaves; and "variegated," with leaves outlined in white.

Soil and Cultivation.—Both of these Laurels do best in a warm, loose loam, but they will flourish in quite poor soil and stand the shade better than most shrubs. They are easily propagated by cuttings of the ripened wood, the procedure being to take a piece about eight inches in length and plant almost the whole of it in the ground. It will always strike root and become a serviceable plant in a twelvemonth. The Portugal Laurel is often grown from seed.

XII

CEANOTHUS, OR "MOUNTAIN SWEET"

<i>Ceanothus azureus</i> , or <i>C. cæruleus</i> .	The Blue Ceanothus
var. <i>Gloire de Versailles</i> and others	
<i>Ceanothus americanus</i> . . .	New Jersey Tea, Redwood, Red Root
<i>Ceanothus thyrsiflorus</i> . . .	The Thyrsé-flowered Ceanothus
„ <i>veitchianus</i>	

THE blue Ceanothus, *C. azureus*, veiled as in a blue mist by the dense curving spikes of its myriads of minute flowers, is a revel of colour. Blueness is rather a rarity in shrub flowering so the lovely azure of this particular species, especially as seen in its variety "Gloire de Versailles," marks it off as of special value in a garden landscape. No wonder the well-known botanist, Robert Brown, the friend of Sir Joseph Banks of plant-loving memory, stood entranced before it when, in the height of its beauty, as a rare and unrecorded shrub, it first caught his eye as he walked in the garden of La Malmaison, near Paris, the year after Waterloo. No wonder he hastened to inquire what it was and whence it came, and made a note to see if its fragrant smoke-blue flowers

Ceanothus, or "Mountain Sweet"

might not also be induced to grace gardens on his side of the Channel. It appeared that the plant was one of the treasures that Captain Baudin, the French explorer, had recently brought back from his voyage to Central America, and that it was a native of Mexico. No time was lost in bringing it into England, for we hear of it as flowering two seasons later in the garden of those enterprising nurserymen, Messrs. Loddiges, at Hackney, having been procured "from our friend Mr. Parmentier, of Engheim." But they were wrong when they prophesied it would probably be a very scarce plant, especially as there was difficulty in propagating it, for, though it has been a long time in coming to its own in the matter of popularity, yet now in the present increased interest in shrubs, it is proving to be comparatively hardy, quite easily propagated, and non-fastidious as to its situation so long as the soil is not too clayey. Indeed, long ago Loudon recorded that it lived through that terrible winter of 1837-38, when even the Thames was frozen over and so much plant life was injured, though naturally it suffered. It is a shrub that should be attempted in every garden that offers any amenity of climate at all, for it will probably succeed as a wall-plant even if it does not as a bush. Other varieties than "Gloire de Versailles" are known, some with a deeper blue flower, some with pink, but it is for its

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glorious blueness that it should be prized and encouraged.

Its foliage is bold and rather like that of a syringa. A leaf may be about three inches long, bright green and smooth on the top, pale and velvety beneath, and the blades are marked by a very fine saw-like edge.

The spikes of blossom appear in July and August and are built up of numerous minor clusters, each of which carries on a single stalk a number of flowers, each flower being itself on a fine stalk. Altogether, over two hundred blossoms may be comprised in a single spike. The tiny flowers when examined under a hand glass show a curious structure. There are five blue sepals whose points curl inwards. Between them stand up five very odd blue petals, each having a thin limb carrying a hood. Opposite these petals, indeed half covered by them, are five stamens, an arrangement that is peculiar, because, as a rule, the stamens alternate with the petals and are opposite the sepals, and the usual explanation given by botanists, in a case such as the *Ceanothus*, is that a whole ring of stamens has dropped out in the course of time. In the centre is a flattish seed-case invested with a honey disc. Ultimately the fruit is a dry little black case containing three seeds and protected by the dried-up calyx.

Ceanothus belongs to the Buckthorn family—*Rhamnaceæ*—but its particular genus is quite un-

Ceanothus, or "Mountain Sweet"

represented in the European flora; in fact, all the species cultivated here come from North and Central America, where they form a large part of the "chapparal" or dense brushwood of the middle elevations of the coast range.

In its native place the bark of this species is used by the natives to reduce fever.

Another magnificent Ceanothus is *C. veitchianus*, which flowers earlier in the year, often at the beginning of May. Its foliage is very different from the preceding species, for the leaves are small, often less than an inch in length, and dark with varnished surface. The flowers are in rounded clusters instead of in spikes, and they are a richer, deeper blue, and so thickly set upon the shrub that it seems clothed in a royal mantle. It is a native of California, and was first sent thence to Messrs. Veitch in England by their collector, Thomas Lobb, in 1859, to whom reference is also made under the heading of the *escallonias* and the *deutzias*.

Ceanothus thyrsiflorus—the Thyrse-flowered Ceanothus—is also sometimes planted, but it is not so beautiful as the other two. The blossoms have a distinctly greyish tinge in their blue (in fact, in one variety, *griseus*, they are quite grey), and they are arranged in thick spires. It is interesting as one of the hitherto unknown plants that Dr. Archibald Menzies

Beautiful Flowering Shrubs

found in California when he voyaged with Captain Cook at the end of the eighteenth century; while the first recognition of it in the Canadian flora in 1820 was made by that Dr. Eschscholtz whom our gaudy *eschscholtzias* commemorate. It is hardy and free-flowering.

Perhaps the hardiest *Ceanothus* grown in this country is also the least beautiful, namely, the "New Jersey Tea," or *C. americanus*. It was given its popular name because its leaves were dried and used in New Jersey as a substitute for genuine tea during the American War of Independence. It bears clusters of minute white flowers from summer to autumn. The leaves are two or three inches long and of plain outline, and, unlike those of the preceding species, they fall every autumn. This American *Ceanothus*, "Red Root" or "Red Wood," as it is often called in its native country, was the first to be known in Britain, for it was introduced at the very beginning of the eighteenth century by Bishop Compton, of London, and grown by him as a rarity in his wonderful garden at Fulham.

The name *Ceanothus* is from a Greek word meaning "to cleave," and was originally used by the Greeks to denote some spiny plant. It is difficult to understand how it has come to be transferred to this particular group of plants, as there is no question of

CEANOTHUS ("Mountain Sweet")

Ceanothus azureus

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Ceanothus, or "Mountain Sweet "

spininess about them. The homely name for them in their native land, "Mountain Sweet," suggesting charm, grace and delicacy, is far more appropriate.

Soil and Cultivation.—A light soil and a sunny place are the requirements of a Ceanothus. Usually the plants are grown as wall shrubs, and, in fact, are best so, and will cover a south wall with an abundance of blossom. They flower on the shoots of the current year. Their propagation is by cuttings raised in gentle heat in July and August. Many hybrids are being now raised, *azureus* and *americanus* being favourite parents, and these hybrids are hardier and more useful in our gardens than the original stock.

XIII

THE AZALEAS

Hybrid forms of

<i>Rhododendron calendulaceum</i>	.	Flame Flower
„ <i>nudiflorum</i>	. .	Wild Upright “Honeysuckle” or Pinxter Flower
„ <i>viscosum</i>	. .	Swamp Honeysuckle
„ <i>flavium</i>		
<i>Rhododendron sinense</i>	. . .	Chinese Azalea
„ <i>mollis</i>	. . .	Japanese or Downy Azalea

A GARDEN of flame! that is the description that best fits an Azalea garden seen under the brilliant sky of June. And its note of colour marks the Azalea's brilliance as unparalleled among flowering shrubs, so vivid is its glory, so varied its hues. “I always rejoice when the Azalea blooms,” says George Ellwanger in “The Garden's Story.” “In it I find a charm presented by no other flower. Its soft tints of buff, sulphur, and primrose, its dazzling shades of apricot, salmon, orange and vermilion are always a fresh revelation of colour. They have no parallel among flowers, and exist only in opals, sunset skies, and the flush of autumn woods. . . . I admit the *Rhododendron* is magnificent where it can be acclimated, but . . . it is exceeded in gor-

The Azaleas

geousness by the Azalea. Then its delicious, uncloying perfume—why does not Piesse embody it in an essence? Its common name—Swamp Pink—brings up its odour and its flame. A bed of Azaleas with a foil of dark green is a sight worth going miles to see, and an acquisition worth obtaining at any price of peat and culture.” This is the praise given by an American to an American garden, but all who have been privileged to see the Kew Azalea Garden at its zenith in late May will enthusiastically endorse his remarks, for they too have had a vision of beauty—a glimpse into fairyland.

But the hardy Azaleas in our gardens to-day are by no means pure products of Nature. They are the hybrid offspring of generations of crossings and re-crossings, the result of a century's evolution under the direction of nurserymen; their history is one of the most intricate chapters of our gardening lore. For their ancestors we must turn to the West and to the East. At the outset, then, their parentage lay with the Swamp Honeysuckles, or so-called Wild or Upright Honeysuckles of North America—the Flame Flower, or *Rhododendron calendulaceum*, the Pinxter Flower, or *R. nudiflorum*, and the Swamp Pink, or *R. viscosum*; and of these three by far the largest part has been played by the Flame flower, the *R. calendulaceum*. This is a shrub usually eight or nine feet high, which

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grows on the banks of rivers and on the hill slopes of Georgia and Carolina. John Bartram, exploring botanically with Sir Joseph Banks's Company in 1774, describes his dramatic discovery of it. He had been passing through a dark wood, and suddenly emerged to face a blaze of colour so vivid in scarlet, orange, gold, flame and cream that for one startled moment he thought the hillside opposite was on fire. Since the flowers appear before the leaves have made much headway upon the bare branches, the brilliancy of hue is practically undiluted by green, and the popular name, Flame Flower, is most apposite. Botanists call it "*calendulaceum*" because it is reminiscent of the vivid, if homely, marigold—*Calendula*. From this parent, then, do the flame-coloured Azaleas of our gardens derive their orange and scarlet hues—their scale of tints that run the whole gamut of splendour.

The second, the Swamp Honeysuckle, the Pinxter Flower. *R. nudiflorum*, has rich pink, slightly scented blossoms in clusters, and flushes woods and hillsides with a rosy hue. It is a bristly, large shrub and its specific name refers to the fact, already mentioned, that its flower buds burst while the branches are still almost bare of leaves. Its common name, Pinxter Flower, was given it by the Dutch colonists because they thought it flowered about Whitsuntide—Pinxster or Pingster being derived from the German *Pfingsten*,

The Azaleas

i.e. Pentecost or Whitsunday. But as a matter of fact it is usually in bloom well before that festival.

The third of these American shrubs is the Swamp Pink, or *true* Swamp Honeysuckle, *R. viscosum*—“*viscosum*” because the calyx of its flower is glandular and sticky. Its flowers are usually white and deliciously fragrant. They are later in appearing than the two previously mentioned species, and as a consequence the leaves are generally full grown when flowering commences.

These shrubs appear to have been brought into England first by Peter Collinson, the importer of so many American shrubs, about 1734; but they made no headway in our English gardens, and half a century later, when the collection of shrubs of a well-known gardener, Mr. Bewick, was sold, specimens of the Pinxter Flower, Azalea, fetched as much as twenty guineas.

In the last decade of the eighteenth century another Azalea was introduced into Great Britain, but this time it came from the East, and not from the West, and it carried clusters of rich yellow flowers. It was found growing on the eastern side of the Black Sea, and one observer describes how he found thousands of these shrubs in full bloom in a marsh that every spring-tide was overflowed by the sea. The natives knew it as the “stupefying shrub,” because animals browsing on

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it were poisoned, and the honey the bees drew lavishly from it was narcotic. The same observer records, however, that he found a certain Tartarean farmer who lived entirely on the profits of the honey his bees drew from this shrub; apparently the Turks of Constantinople, with whom he traded, liked the gentle narcotic effect. This Azalea, then, is *R. flavium*. It, too, had deciduous leaves, and flowers that blossomed before the foliage was fully grown. It was the only true yellow Azalea then known, and its beauty and hardiness made it a welcome addition to English gardens.

At the beginning of the nineteenth century there commenced a great movement among gardeners with respect to the hybridising of Azaleas, and these four species, the three Western and the one Eastern, were the factors of endless combinations and permutations, and some very beautiful garden hybrids were evolved, notably at Highclere Castle, near Newbury. The movement spread; a Flemish baker named Mortier, living at Ghent, became also bitten with this interesting pursuit, and he not only raised a number of notable new varieties himself, but infected his gardening townsfolk with the same desire. The sandy soil and the climatic conditions of this city proved exceptionally favourable to the shrub, and hence there quickly grew up a great industry for raising Azaleas, with a world-wide trade, so much so that the name "Ghent Azaleas" became

The Azaleas

the generally accepted term to designate the whole range of hardy deciduous shrubs with scarlet-red, flame, and cream-coloured flowers that have been thus evolved. In fact, to-day the four natural species are very rarely found, nurserymen invariably selling improved artificial varieties of fancy nomenclature, whose exact pedigree has been lost—for instance, “Admiral de Ruyter,” with blood-red flowers.

But towards the middle of the nineteenth century the hardy deciduous Azaleas of Britain received a noteworthy addition, for Robert Fortune, plant hunting in China, brought into notice certain Chinese Azaleas, in particular the yellow-flowered “Chinese Azalea,” *R. sinense*, which he found wild on the Ning-po hills; and a specially beautiful species, “it seemed to paint the hill sides, so large were the flowers, so vivid the colours,” was his comment. The Chinese had long cultivated these shrubs in their gardens, and Fortune described how at Fa-tee “the Azaleas were splendid. Every garden was one mass of bloom, and the different colours of red, white and purple blended together, had a most beautiful and imposing effect”; and he specially mentioned the yellow *R. sinense* as among them.

Hartley Coleridge gave the plant a poetic welcome—

“Welcome sweet stranger from the gorgeous East ;
Nature on thee put forth her beauteous might,
For aye array'd as for a marriage feast,

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Or like an incarnation of pure light.
What man can see thee so superbly drest
Without a thought of her whom he loves best."

The Japanese equivalent of this shrub was also introduced—*A. mollis*—one of the most lovely deciduous shrubs known, whose blossoms range in hue through all the yellows—pale primrose to red-orange. Botanists classify the two as varieties of the same species under the name of *R. sinense*, but in all nurserymen's catalogues they are left distinct. The differences between them are, however, small; the leaves of *R. mollis* are only slightly hairy, while those of *R. sinense* are covered beneath by a dense felting of hairs; the calyx in the Japanese shrub is as long as the seed-case, that in the Chinese much shorter; the corolla is rounder, fuller and shorter in the first named than in the second.

Cross-breeding between these two shrubs has given rise to a whole new series of hardy garden Azaleas—the *mollis-sinensis* hybrids—and these, like the Ghent Azaleas, found in pre-war days their breeding quarters in Belgium.

As in the Ghent Azaleas the varieties are infinite and their description quite outside a short sketch, but the beautiful Anthony Koster, with huge bright yellow clustered blossoms, is one of the best known. In some of the seedlings of *R. sinense* a strain from

AZALEA



The Azaleas

the Ghent Azalea has been introduced with a further enrichment of effect.

Before the war there were over five hundred nurseries in Ghent from which millions of Azaleas were distributed the world over every year, and the Quinquennial Exhibition of Azaleas bore witness to the vastness of this floral industry. Then, in "Azalea Hall," three acres of Azaleas could be seen, all in the zenith of their brilliant beauty, a flower display so unequalled in gorgeousness and magnificence that one could only endorse Ellwanger's judgment: "The Ghent nurserymen who have developed its hues should receive a medal of rubies, topazes and zircons executed by a Cellini."

The Azaleas are now classed botanically with the Rhododendrons, both being placed under the genus *Rhododendron* in the family of the Heaths—*Ericaceæ*; indeed it may be said that in Japan the Azalea takes the place that Heaths do in this country. At one time the Azaleas were in a distinct genus, and in many respects they appeared to be a well-defined group with their deciduous foliage and their five stamens, as against the evergreen Rhododendrons with their ten stamens. But with the better knowledge of the evergreen Indian Azaleas, the two groups are found to merge one into the other by imperceptible degrees, so that it is no longer possible to differentiate them.

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The leaves of an Azalea, like those of Rhododendrons, are simple and undivided in outline; they frequently show the most beautiful autumnal tints before they fall. The flowers have a five-lobed calyx, a funnel-shaped corolla, five stamens whose anthers open by pores at top to discharge pollen, and a seed-case carrying a long style with a knob-like stigma and enclosing very many small seeds. The fruit is a dry capsule. They carry honey and are deliciously fragrant; in fact, it seems as though Nature had denied them no possible charm it was in her power to bestow. It is indeed strange that they are not more commonly grown; perhaps their very gorgeousness renders the British mind suspicious of their "wearing qualities." Really they are quite hardy, and might well rank as ornamental shrubs for every garden. But as Mr. Watson remarks in his "Rhododendrons and Azaleas": "They haven't got to that position even yet, although they have every right to it—always providing the soil is to their liking." Surely it is time that those who are responsible for public parks and pleasure gardens, as well as the public in general who can only garden in a small way, should wake up more fully to the supreme claim of the Azaleas, not only to rank among the more desirable shrubs, but also to take their place as one of the most common flowering shrubs in our land.

The Azaleas

Soil and Cultivation.—Peaty or sandy soil with an admixture of good leaf-mould is necessary to them. Chalk or lime in the soil they abhor, like their relatives the Rhododendrons. They can be propagated by seed, by layering, by cuttings of half-ripened shoots, placed in a little warmth in July, and by grafting.

XIV

LILACS AND PRIVETS

Syringa and Ligustrum

TRUE LILACS—

<i>Syringa vulgaris</i>		Common Lilac
„ <i>persica</i>		Persian Lilac
„ <i>chinensis vulgaris</i> × <i>persica</i>		Rouen Lilac
„ <i>emodi</i>		Himalayan Lilac

PRIVET LILACS—

<i>Ligustrina</i> (or <i>Syringa</i>) <i>japonica</i>	.	Japanese Lilac
„ „ <i>pekinensis</i>	.	Pekin Lilac
„ „ <i>amurensis</i>	.	

PRIVETS—

<i>Ligustrum vulgare</i>	. . .	Common Privet
„ <i>ovalifolium</i>	. . .	Oval-leaved Privet
„ <i>sinense</i>	. . .	Chinese Privet

“Lilacs glow and jasmines climb,
Larks are singing the livelong day.
O the golden summer prime,
June takes up the sceptre of May.”

(Arthur o' Shaugnessy.)

“THESE trees grow not wild in England, but I have them growing in my garden in very great plenty,” reported Gerard in 1597 of the “Blew Pipe tree,” which “the later Physitions do name Lillach or Lilach, and of the ‘White Pipe Tree’

Lilacs and Privets

which the later Physitions call *Syringa*." And the "later Physitions" names still persist in our popular terms for these two shrubs, though botanists now call the Lilac "*Syringa*," and the *Syringa*, or Mock Orange, "*Philadelphus*." (See chapter on "*Syringa*").

So, too, Lord Bacon in those same Elizabethan days, spoke of the "Lelach Tree" among the "things of beauty" in his April garden, though he was almost a month too previous in his date, and other writers of the time also refer to it in general terms. Hence it is obvious that this shrub, or small tree, whose native home was the uplands of Eastern Europe, has been a welcome addition to our gardens for centuries, and that to state, as is usually done, that it was "introduced" here in 1597 is entirely misleading. The fact, too, that it can boast of a number of homely names is evidence of its long establishment, for only native plants, or plants of long and intimate standing, acquire the right to a choice of popular names. Its oldest name seems to have been the Pipe Tree, because the stalks and branches are filled with soft pith which can be easily removed; it is said that Turkish pipe stems are commonly made from it. Parkinson (1640), as well as Gerard, refers to it thus. A quaint name, "the Duck's Bill," is probably due to the shape of the flower-buds. "Laylock" and "Lily Oak" are corruptions of Lilac, and Lilac itself is from a Persian word

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meaning "flower," and came with it from the East. "May Flower" refers to the date of its flowering. "Prince's Feathers," a pretty Cornish name, is obviously due to its plumes of flowers. "Oysters" is not easy to explain. "Spanish Ash" is probably due to the fact that the Lilac was often grafted on the ash. Why it should sometimes be called "Roman Willow" is difficult to say.

But in spite of its "at-homeness," in this country, with every cottager growing it and no palace garden complete without it, it has never established itself wild here. Short of that, however, where is it not found?

"And close beside the gateway,
Tall, upon either hand,
Their green robes shot with sunlight,
Like queens the Lilacs stand.
And one is crowned with purple,
And one is crowned with white ;
Look ! where the wind is passing
They bow to left and right.
And trails of scent they scatter
As royal gifts to all,
To every creature dwelling
Within the garden wall."

(Violet Jacob.)

And because these trails of scent have a somewhat rare and exclusive property about them, the Lilacs seem to make a special appeal to sentiment ; "the first whiff of their perfume in the garden is as the very heart and

Lilacs and Privets

soul of memory."* And hence the shrub has become associated with the affections and memories of youth, so that "the lilacs where the robin built" are inevitably part of the poet's remembrance of "the house where I was born." Since memories of the past are necessarily associated with death in some form or another, it seems natural that the Lilac should have become linked with the thought of death—with death specially in the spring-time; perhaps, too, the purples and whites of the blossoms suggest mourning. So Walt Whitman, mourning the passing of President Lincoln in the spring-time said,

"Ever returning spring, trinity sure to me you bring
Lilac blooming perennial, and drooping star in the west,
And thought of him I love."

And when he further desired to chant "a song for you O sane and sacred death," he wrote,

"Here coffin that slowly passes,
I give you my sprig of Lilac.

O death, I cover you with roses and early lilies,
But mostly and now the lilac that blooms the first;
Copious I break, I break the sprigs from the bushes.
With loaded arms I come, pouring for you,
For you and the coffins, all of you, O death."

There is the same idea underlying the rosemary, a scent that links up memories of the past, and hence association of death with life.

* "A Garden of Pleasure."—E. V. B.

Beautiful Flowering Shrubs

The Lilac undoubtedly stands in the very forefront of our beautiful flowering shrubs, and its value for us is increased by the fact that it will thrive with little attention or regard to soil. It is, however, too often maltreated by being half starved for air and sunlight in some overcrowded shrubbery, whereas it responds wonderfully to generous treatment. It will grow to the height of a small tree—say twenty feet—but normally it has the true shrub characteristic of branching from the roots and forming several primary stems, though it is often pruned and trained so as to produce a small single trunk. Its foliage is full and of a very fresh green colour; the individual leaves are heart-shaped. In late May days there appear at the ends of the branches, and usually in pairs, rounded pyramids “of an exceeding faire blew colour compact of many small floures in the form of a bunch of grapes” (Gerard’s description). In an ordinary Lilac these panicles are six to eight inches long, but they may be half as long again in specially cultivated varieties. An average cluster contains some one hundred and thirty flowers arranged on sub-branches radiating from a long central axis. In the bud stage the hue is dark purple; it becomes appreciably lighter as the flowers open.

There are various points of interest in the flower. Out of an extremely small calyx the long thin petal tube rises, bulging a little two-thirds of the way up.

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At the top it expands into a little cross of four rounded petal lobes. At the mouth of the tube can be seen the tops of two anthers almost closing it. If one slits down the petal tube, one can see that these anthers are set right down upon the tube in the bulging—they possess no filaments. At the base of the tube is a minute seed-case, and on it rises a very short column whose forked tip is far beneath the anthers. Abundant honey, which has exuded from the ovary wall, fills the bottom of the petal tube. This and the “exceeding sweet savour,” which Gerard noted, make the Lilac flowers very attractive to the insect world, and bees, butterflies, hover flies, and flies in general visit it largely. Of these the *Macroglossa bombyliiformis* seems specially to visit it in great numbers, and to show a marked preference for it. Some insects come for the nectar, others for the pollen. Those that come for the sake of honey bring about cross-fertilisation. They insert their proboscides—dry at the outset—and slip them by the anthers. But when they have drunk their fill and wish to withdraw, the now moistened proboscis attaches pollen grains, and the insect flies off carrying them with it to the next flower, where they are automatically rubbed off by the stigma fork. The insects which come merely to devour pollen, bring about self-fertilisation, for in rummaging at the anthers some of the pollen is bound

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to fall down the tube and settle on the stigma, thus fertilising it. Both methods of fertilisation are efficacious in this plant. In fact, a flower necessarily fertilises itself (if it has not already been fertilised through insect agency) when it withers and the anthers contract and discharge their pollen down the tube.

The fruit is small, dry and brown, and contains a seed in each of its two chambers.

Recently there has been a great movement in the cultivation of Lilacs, with a corresponding development in the colour, number and size of their flower panicles. Every gradation of hue, from the deepest purples and rich crimsons to pure white, is now represented in them, and one may have a beautiful bush carrying perhaps three hundred magnificent clusters of flowers all abloom together. These endless varieties are products of the nurseryman's labour—the industry is specially great in France and Holland—and their names and relative merits can be found in catalogues sent out from the nurseries. Often they are so closely alike that it is almost impossible to distinguish between them. One may perhaps mention Charles X, with rich red-purple blossoms; Souvenir de Louis, Spath, and Negro, with deep blue-purple single flowers; Alba magna, with single white flowers; and Miss Ellen Willmott, with glorious panicles of double white flowers, as among the best.

Lilacs and Privets

The Persian Lilac (*Syringa persica*), is a much smaller shrub, not usually exceeding six or seven feet in height, but very attractive in its neatness and compactness. Its trusses of flowers are of typical lilac hue and most fragrant; they are, however, only two to three inches long, and hence are considerably less than those of the Common Lilac. In one variety the flowers are white. The leaves are usually lance-shaped, though the variety *S. laciniata* has them cut down to the midrib into a number of lobes. This species appears to have been brought into England in a cultivated form via Persia and India about 1640. Its native home is in Afghanistan, and it was found wild there by Dr. Aitchison of the Afghan Boundary Commission in 1879. During centuries of cultivation it has departed somewhat from the wild type.

The Rouen Lilac (*Syringa chinensis*) is a hybrid between the Common Lilac and the Persian Lilac, and is so called because it was raised in the Botanical Garden at Rouen by M. Varin the Director, towards the close of the eighteenth century. Its first appearance in this country was in 1795. It is, however, pointed out that this Lilac has also been in common cultivation in China for over a century, but there is no reason why the Chinese should not have produced this particular hybrid as well as the western gardener. It possesses characteristics intermediate between the two

Beautiful Flowering Shrubs

parents, the size of the shrub in general and of the individual flower trusses being smaller than the Common Lilac and larger than the Persian. It is a vigorous plant with a free-flowering habit of special beauty, for a whole series of pairs of deep violet-coloured flower pyramids are produced along the sprays. Occasionally the flowers set fertile seed, which is not usually the case with hybrid forms.

The Himalayan Lilac (*Syringa emodi*) flowers rather later than the Lilacs already mentioned, late June seeing it in its zenith. It also lacks that charm of the Lilac—scent. It has pale-purple blossoms. The leaves are dark green above, white below.

There are three Lilacs known as Privet Lilacs—botanically the *Ligustrina*—which are sometimes cultivated, viz. the Japanese Lilac (*S. japonica*, or *Ligustrina japonica*), the Pekinese Lilac (*Syringa*, or *Ligustrina pekinensis*), and the *Syringa*, or *Ligustrina amurensis*. All have white, scentless flowers in which the corolla tube is so short that the stamens project their anthers well beyond it, instead of being hidden within it as in the true Lilacs. The first named came from Japan, via America; the second was discovered in North China by Abbé David, and sent from Pekin to Kew in 1881 by Dr. Bretschneider; the third is Russian, and was found in Manchuria in 1857 by Radde, a Russian botanist.

COMMON LILAC

Syringa vulgaris

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CALIFOR.



Lilacs and Privets

Soil and Cultivation.—The Lilacs should be grown in a deep loamy soil, not too moist, and be well manured every other year. The vigorous suckers which they throw off from their roots should be sternly repressed as they grow; beside this little pruning is necessary. The better varieties are often grafted on Common Lilac or Privet, but this is not a good practice. Propagation should be effected by layers or cuttings.

THE PRIVETS . . . *Ligustrum*

The Privets belong to the same family as the Lilacs, viz. the *Oleaceæ*, and through the Privet Lilacs the two are very closely allied. One can hardly count the Common Privet, *L. vulgare*, among beautiful shrubs, but seen at its best, say on the sunny chalk of Dover, its little cream flower pyramids doing themselves full justice, there is something distinctly attractive about it. A peculiar fragrance floats around, a fragrance of an old-fashioned sweetness to some minds, to others a scent that is absolutely distasteful. This scent, together with the abundance of honey that fills the flowers, draws all manner of insects, as does the Lilacs', but one handsome moth in particular is so constantly in attendance that it has come to be called the Privet

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Hawk Moth (*Sphinx ligustri*). Our forefathers, without the wealth of beautiful shrubs to draw upon that we have, loved the Privet and used it, as an old writer said, "to make hedges or arbours in gardens . . . wherein it is so apt that no other can be like unto it, to be cut, lead and drawne into what form one will, either of beasts, birds, or men, armed or otherwise."

The flowers, borne in the same kind of pyramidal clusters as in the Lilac, are a creamy-white colour in all Privets; the leaves are of simple outline. The Common Privet, though not strictly an evergreen, since its leaves fall every spring, is practically one, inasmuch as the new leaves have appeared before the old fall.

In the Oval-leaved Privet (*L. ovalifolium*) the leaves are large, dark and very glossy. In one variety they have a border of bright yellow, and the shrub is then known as the "Golden Privet." It is very common in window boxes, hedges, etc.

The Chinese Privet, *L. sinense*, is far the handsomest of all, and well worth growing as a flowering shrub. In July it is crowned with a mass of creamy panicles of blossom, each cluster some four inches in height; while in autumn, like other Privets, it bears small round purple berries which give it a second note of interest.

The Privets are all members of the Old World, and

Lilacs and Privets

the Common Privet is a native of Great Britain. The story of how the plant came to be called "Privet" is curious and a little involved. There seems to have been an extraordinary confusion between the primrose and the Privet in the matter of their names. Privet is a softening of the name "primet," and this in its turn is an abbreviation of "primprint," an old English flower-name that originally belonged to the primrose and was derived from "prime printemps," signifying "first in the springtime." The primrose's Latin name here was, in Elizabethan days, *Ligustrum*, but on the Continent this was given to the Privet; so in the interchange of botanical terms with foreign countries, when the shrub was alluded to as *Ligustrum*, the term "primprint," which had always been associated with it in English minds, became also referred to the shrub, and it was first called the Primet and then the Privet.

Soil and Cultivation.—There are no shrubs easier to cultivate than the Privets, and few less exacting as to soil. They are propagated from cuttings with the utmost readiness.

XV

THE KALMIAS

<i>Kalmia angustifolia</i>	. . .	Sheep Laurel, or Stagger-bush
„ <i>latifolia</i>	. . .	Mountain Laurel, or Calico Bush
„ <i>glauca</i>	. . .	The Pale Laurel
„ <i>hirsuta</i>	. . .	The Hairy Laurel

THE Kalmias are all purely North American shrubs. Indeed, it has been seriously suggested that a *Kalmia* should be adopted as the national flower of the United States, this claim being based on the three facts that it is inherently American and widespread, that it is distinctly beautiful, and that its very name is a memorial to one of the first botanists who studied the American flora. Peter Kalm was a Swedish botanist who, at Linnæus's suggestion, was sent by the Academy of Sciences at Abo in Sweden to make a botanical survey of the New World. At that time (*circa* 1748) the American flora was a region largely unexplored, but European plant collectors were beginning to strain eager eyes towards its treasures, and the eighteenth century is chiefly remarkable from the botanical point of view for the great numbers of new species that passed over from the New World into the Old. Peter Kalm, a pioneer in this exploration, botanised

The Kalmias

in Pennsylvania, New York and Canada, and it was in recognition of these services to science that Linnæus memorialised him when he was naming and classifying American "finds." It was Peter Collinson, however, a Quaker of Hendon, who actually brought the Kalmias into England, our commonest and best-known one—*Kalmia latifolia*, the Mountain Laurel—being introduced here in 1734, and *Kalmia angustifolia*—the Sheep Laurel—two years later. A third species that we grow in our gardens, *Kalmia glauca*—the Pale Laurel—was found a little later still in Newfoundland by Sir Joseph Banks, and brought here in 1767.

The Mountain Laurel (*Kalmia latifolia*), the "Common Laurel" to an American, is a shrub usually about six to ten feet high, but it may double this height in favourable surroundings. It is beautiful even when growing singly or in a clump in our gardens, with its glossy dark evergreen foliage and its quaint formal pink flowers that have earned it the name of "Calico Bush," but those who have seen it in its native home, massed together over great areas in wood or upon hillside, are enthusiastic in its praises, and speak of it as "a waving sea of beautiful rose-coloured flowers growing so closely together as almost to hide the leaves from view."

Closer inspection shows that though the leaves are plain ovals—rather uninteresting—the flowers are

Beautiful Flowering Shrubs

wonderful structures. In the bud, as our picture shows, they are like nothing so much as pink-and-white "sweets," the crinkled "comfits" beloved of children. Then out of a tiny five-pointed sepal ring rises the coloured corolla, folded rather into the shape of a bouquet holder, topped with a ring of ten projecting bosses. Above these bosses rises a ten-ridged pink dome. This dainty shape is maintained until the bud is considerably enlarged, then though the lower part, the "bouquet holder," remains as before, the rose-pink dome unpleats and opens out into a shallow cup, white inside and ringed with ten pockets. In Ruskin's words the inside of each flower is "like the beating-out of bosses in hollow silver, beaten out apparently in each petal by the stamens instead of a hammer." In the centre of the bottom of the cup is the opening into the corolla tube, this opening being circled with a crinkled pink line. Up through the tube rise ten stamens, whose brown heads at the outset are caught back, one in each of the pockets. In the very centre of the flower is a shiny-white, pink-tipped column, which leads down to a seed-case frosted all over with silvery hairs at the base of the tube.

As the sun shines on the flowers the bent-back stamen filaments in their constrained position become in a state of great tension—"sensitive"—and at the slightest touch from an insect they suddenly spring

The Kalmias

erect with such force that their contents of powdery pollen are shot out of the little circular holes that exist at their anther tips. It has been suggested that the sudden movement frightens the insect that has unwittingly brought it about, and in the midst of a pollen shower it flies off hurriedly to another flower, thus bringing about cross-fertilisation. A honey bee has actually been watched causing these explosions and effecting cross-fertilisation. Some observers say that if no insects come the flowers wither and fall off with the anthers still in the petal pockets. But observations made in the Dresden Botanical Garden show that this sudden up-springing and scattering may take place spontaneously; and there, at any rate, insects never seem to visit the rosy blossoms. The pollen tended to be shot out a foot or so on to the ovary columns of adjacent flowers, rather than on to the flower's own ovary column. However, good seed resulted from these manoeuvres.

All kinds of uses have been found for this shrub in its native home. Its very hard wood is manufactured into chisel handles and spoons, hence is the plant sometimes known as "Spoon-wood"; the glossy evergreen foliage is used for decorations at Christmas and other festive occasions, the berries of the deciduous holly (*Ilex verticellata*) being often added to give a verisimilitude to English holly. The leaves and

Beautiful Flowering Shrubs

berries are to some extent poisonous, causing vertigo and dimness of sight, and it is said that the Indians used to make a decoction from them when they wished to destroy themselves. During a certain epidemic in Philadelphia an edict was issued by the mayor to forbid persons to eat any birds, because it was found they were feeding upon *Kalmia* berries.

The Sheep Laurel (*Kalmia angustifolia*) is sometimes known as "Lamb-kill" and "Stagger-bush," from the same belief in its possession of poisonous qualities. It is a smaller shrub than the previous one, not exceeding a couple of feet in height, with narrower leaves. Peter Kalm described the flower as a "real ornament to the wood; they grow in bunches like crowns, and are of a fine lively purple colour." They appear about the end of May. A variety known as "the Dwarf"—*Kalmia nana*—is a dainty little shrub about a foot high.

Kalmia glauca or (*K. polifolia*), the "Pale Laurel," flowers a little earlier than the Sheep Laurel. Its evergreen foliage is a bluish-green above, almost white beneath. The flowers are the usual beautiful rose colour, and the whole shrub hardy and most attractive at the end of April and throughout May.

Kalmia hirsuta has hairy leaves and stems, and flowers late in the summer, about August. The last two are very much smaller shrubs than *K. latifolia*.

CALICO BUSH

Kalmia latifolia

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CALIF



The Kalmias

Soil and Cultivation.—The Kalmias are peat lovers and chalk abhorrrers. Rich, moist, peaty earth, to which has been added leaf-mould or loam, is their favourite soil; in fact they flourish happily in company with rhododendrons, sharing with them the dislike to lime. They are propagated by grafting, by cuttings (fostered under glass), and by layers, but best of all by their seeds which are very minute.

XVI

MEXICAN ORANGE AND SKIMMIA

<i>Choisya ternata</i>		Mexican Orange
<i>Skimmia Fortunei</i>		
„ <i>japonica</i> , or <i>S. oblata</i> or		
<i>S. fragrans</i> (in the		
male form)		

THE Mexican Orange is always a handsome shrub. Its evergreen foliage is dark and shining, and any appearance of undue heaviness is avoided by the cutting up of the large leathery leaves each into three leaflets, leaflets that are broad at the top and narrow at the point of attachment. To this trifid division it owes its specific name, *ternata*. But, if handsome at all times, it is specially so in May and June—and to a lesser degree again in the autumn—when it is covered with particularly lovely clusters of white, scented, star-like blossoms. The parts of these blossoms are all in fives; there are five sepals which quickly fall away, five white petals, two rings of five stamens in each, whose filaments are flattened so that they stand like a wall round the seed-case. This case is composed of five ovules, which form a ball, with a yellowish column rising between

Mexican Orange and Skimmia

them. The ball easily falls into its five component pieces, and each contains two seeds and has a valve which, at the right moment, opens to permit of their escape.

This is a quick-growing shrub and hardy, given fairly sheltered quarters and rich soil, and in an ordinary way will grow to a bush about six feet high, with the same diameter, but it can do better than this even in this country. In a certain Falmouth garden three small shrubs, planted only a few years ago, some little distance apart, are now a solid mass many yards in diameter and fully ten feet high, and a most glorious sight in April when covered with the white blossom. In fact, as the owner said, it "grows like a weed."

The Mexican Orange and its relatives the Skimmias belong to the family *Rutaceæ*, a family largely represented in the tropics, but without a single member indigenous to Great Britain. The rue has, however, long been found in our gardens. The orange and the lemon are closely allied to these shrubs.

The Mexican Orange, as its name implies, is a native of Mexico, and it is stated that it was first brought to this country in 1825, but it does not appear to have made much headway here for, though it is referred to in Loudon's "Hortus Britannicus" of 1832, it is not mentioned in the same writer's "Encyclopædia

Beautiful Flowering Shrubs

of Trees and Shrubs in British Gardens," published in 1842. Of late years, however, it has been more appreciated and is being widely grown. The name *Choisya* was given it to keep in mind the researches of M. J. D. Choisy, a Geneva botanist, who worked with the celebrated scientist De Candolle, and wrote, in particular, on the family of the St. John's Wort (1821).

THE SKIMMIAS

The Skimmias are evergreen shrubs of the same type, but neater, primmer and smaller generally, and the white flower-clusters are flatter and more formal. They are natives of the East—China and Japan—and may be said to be the eastern equivalents of the western Mexican Orange. But they are marked by one great distinction, their flowers are either male or female; that is, some flowers have only stamens and no functional seed-case, and other flowers possess a proper seed-case but no fertilising stamens. In both cases, however, the flowers have the ring of five white petals, so their superficial appearance is much the same. In *S. Fortunei* both male and female flowers are borne by the same plant, so every specimen of it is a berry-bearer; but in *S. japonica* the sexes are on different shrubs, one shrub being wholly male while another will be wholly female.

MEXICAN ORANGE

Choisya ternata

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Mexican Orange and Skimmia

With this division of the sexes it is therefore necessary, in the case of *S. japonica*, to plant shrubs of opposite sexes in close vicinity if the full development of the Skimmia is to be attained. Both sexes have a special period of beauty in March and April, when they are covered with their clusters of white, star-like blossom, and the female plants have also a second day of charm in the autumn, when their flowers are replaced by large red berries. No berries, of course, appear on the male shrubs; when their flowers wither they fall completely away. Apparently the berries are poisonous, for the name Skimmia, in its original Japanese form, literally means, "a hurtful fruit." It was Thunberg (1743-1828), the pioneer botanical explorer of Oriental flora, who adapted the eastern name to western use.

Thus, largely owing to the division of sex, there has been a good deal of confusion in the naming of the Skimmias. *Skimmia japonica*, "one of the very best town evergreens we possess,"* is a Japanese plant, and the one described by Thunberg. It was, however, only introduced into England as a living plant a little before the middle of last century by Robert Fortune. Afterwards it was also known as *S. oblata*, while the male plant was called *S. fragrans* owing to the sweet scent of the flowers. A variety

* W. Robinson, "English Flower Garden."

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known as *S. Veitchii* has its leaves outlined with white and is particularly formal. *Skimmia Fortunei* is a Chinese species which Robert Fortune discovered in 1848 in a garden at Shanghai, originally brought there from a mountain-side in the interior. It is more of a dwarf than *S. japonica*, and makes a good pot plant. It has often been called *S. japonica* by nursery gardeners, making confusion worse confounded in the nomenclature.

The leaves of the *Skimmia* are dark, leathery and of simple outline; there is none of the division into three leaflets which is characteristic of the *Choisya*. They are also aromatic.

Soil and Cultivation.—A moist loam suits these shrubs best, and a certain amount of shelter is desirable. As they do not require a great deal of sunshine, they can be well used to fill in shaded corners. In the case of *Skimmia japonica*, though necessary to plant shrubs of opposite sex in proximity, one pollen-bearing plant will suffice among half a dozen berry-bearing shrubs. But in this country, though a certain amount of fruit will result owing to the chance visits of insects, it is advisable, if a large crop of the big scarlet berries is desired, to assist Nature by hand fertilisation—that is, to take some fluffy “tail,” e.g. a rabbit’s, and first brush it over the ripe stamens of a male flower and then dust it over the female

Mexican Orange and Skimmia

flowers, thus *ensuring* transference of pollen to ovaries. This should be done whether the single-sexed flowers are borne on different shrubs, as in *S. japonica*, or merely on different branches of the same shrub, as in *S. Fortunei*.

XVII

THE WEIGELAS

<i>Diervilla florida</i>	.	.	or	<i>Weigela amabilis</i>
"			"	" <i>rosea</i>
" <i>floribunda</i>	.	.	"	" <i>multiflora</i>
" <i>grandiflora</i>				
" <i>japonica</i>				
" <i>lonicera</i>	.	.	or	<i>D. canadensis</i> , or <i>D. lutea</i> , <i>D. Tournefortii</i>

IN one of the most beautiful islands of the world, the island of Chusan, off the coast of North China, the common Weigela, *W. rosea*, of our gardens, was first found by an Englishman. It was growing in the garden of one of the mandarins there, a garden famed for its pretty rockwork, and commonly known as "the grotto garden"; and when, in 1843, Robert Fortune's eyes first fell upon it, it was loaded with noble rose-coloured flowers, the pride of the old mandarin and the admiration of all beholders. No doubt it was a magnificent plant, well displayed, for the mandarins' gardens there are but small, and since but few plants can be grown, these are always selected for their beauty and individually treated.

Like everyone else, Fortune fell under the shrub's spell, and he promptly acclaimed it as one of the most

The Weigelas

beautiful shrubs of Northern China and a precious "find" even in that home of beautiful shrubs—of azaleas, forsythias, honeysuckles, and wistarias. Prophesying great things of it, he sent specimens home to England, where it was also warmly appreciated. The name *Weigela* then given to it was no doubt in honour of the German botanist Weigel.

Weigela belongs to the honeysuckle family—the *Caprifoliaceæ*—a curiously assorted group of plants which have little family resemblance to one another, as one realises when one recalls the members of it—the elder, the honeysuckle, the guelder rose, the little green moschatel, and the Weigelas; and now they are placed in the *Diervilla* group of that family, and, in fact, are more often referred to as "*Diervillas*," though the old name still clings to them.

In spring *Weigela rosea* shows buds set in pairs down the vigorous shoots. Each bud is long and narrow, and the brackets on which they are placed are in two parallel lines, the parallelism being very marked and characteristic. A pair of brown scales form the coat of the bud, and within them lie the leaves, their edges slightly rolled inwards, an older leaf enfolding a younger. Their backs are plentifully covered with hairs, which are specially thickly placed along the veins. As the leaves enlarge and separate one from another they roll up into tight coils, which coils, as April days lengthen,

Beautiful Flowering Shrubs

unroll, the warm coat of hairs is shed, and the plain, long, elliptical leaves spread in the sunshine.

The flowers follow later, in June. They are large, bell-shaped, rosy and bright, with a regular five-lobed corolla, the lower part of which is a funnel-like tube set on the end of a long thick seed-case. Five stamens stand on the corolla, their anthers long, thin and attached to the filament in the middle of their length. A thick green column rises through the centre of the blossom from the seed-case, and it is topped with a button-like stigma. There is honey at the base of the petal tube. Middle-sized bees are the visitors catered for, either to collect pollen or to suck honey. *Osmia rufa*, for instance, is a frequent visitor. As it enters, it first touches the button-like stigma (as this projects beyond the stamens), and dusts it with any pollen that it may bring with it; then, creeping right into the flower, it gets plentifully daubed with pollen by the five anthers, which have split on their long inner faces, while it is sucking the nectar. Eventually it flies off, pollen-laden, to cross-fertilise some neighbouring bloom. Large bees cannot get into the flowers, but pollen-devouring beetles are sometimes visitors, and little wild bees, such as *Prosopis*, are occasionally found taking their night's rest in the blossom's shelter. Fruit is, however, very rarely produced in this country.

One curious point is worth notice; as the flower

COMMON WEIGELA

Weigela rosea

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The Weigelas

ages it deepens in colour. This enrichment of hue not only helps to make the whole flower cluster more conspicuous, it also serves to show the bees which flowers to avoid, for the visitors are cunning enough to realise that in the paler flowers the honey and pollen are best and most abundant, so they waste no time over played-out blossoms.

Since Fortune's day other species have come from China and Japan, notably *D. floribunda*, with purplish flowers, *D. grandiflora*, with pink flowers, and *D. iaponica*, with red flowers, and a great number of hybrids and varieties have been raised from among them, and hence one rarely gets a pure-bred plant nowadays. "Eva Rathke," with deep crimson flowers, is much favoured; *D. candida* and *Hortensis nivea*, both white flowers, are also liked.

The Weigelas form handsome big bushes, 4 to 10 feet in height. The blossoms are borne on young shoots of one season's growth. But they do not meet with universal approbation. Thus, an enthusiastic gardener* writes, "Of the scores of Weigelas or Diervillas under cultivation, I know of few to be recommended for the choice collection of hardy shrubs," though he admits that the white varieties are desirable. And it is true, that as the shrub grows old, it tends to straggle and look untidy and poor, but even so it is difficult to

* George Ellwanger, "The Garden's Story."

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believe that its detractors can ever have seriously considered a free-growing Weigela in a happy situation at the height of its beauty. For then it is nothing more or less than a garland shrub, whose long thin shoots, gracefully curving in all directions, are just closely-set pink garlands offering themselves as joy wreaths for some gala-day. Its beauty in those May days is lavish compensation for a little straggling and uninterestingness at other seasons.

The Diervillas with yellow flowers, viz. *D. canadensis* or *lonicera*, and *D. sessilifolia*, hail from the West and not from the East, and were known here a century earlier than *W. rosea*. A French surgeon, one M. Dierville, was the first to bring *D. canadensis* into Europe from North America (about 1739), and Tournefort, the eminent French botanist, named it after him. But neither is of any particular value in a garden except perhaps for its bright foliage in the autumn.

Soil and Cultivation.—The Diervillas will flourish in any ordinary garden soil, provided it is a little damp, but an open uncrowded position, either in isolation or at the edge of a shrubbery, will secure the most satisfactory results. Their propagation is best effected by cuttings taken at the end of May and placed under glass, when they will root in about a fortnight.

XVIII

THE EVERGREEN RHODODENDRONS

Rhododendron arboreum

„ *barbatum*

„ *calawbiense*

„ *ferrugineum* . . . Alpine Rose

„ *fulgens*

„ *griffithianum*

„ *maximum* . . . Rose Bay, or Great Laurel

„ *Metternichii*

„ *ponticum* . . . Pontic Rhododendron

PRINCES among shrubs the Rhododendrons in their massiveness and grandeur hold unquestioned their supremacy. Though they belong to the Heath family—the *Ericaceæ*—and have the heaths and the bilberry for British relatives, yet they are in a section of the family that is entirely foreign and quite unrepresented in our native flora. The first suggestion of a Rhododendron in this country lies in a vague statement that Peter Collinson of Mill Hill, the friend of Linnæus, introduced from America about 1738 the beautiful Rose Bay or Great Laurel (*R. maximum*); from definite knowledge we know that this shrub grew and flowered in a Mile End nurseryman's garden in 1755. With the Rose Bay the Rhodo-

Beautiful Flowering Shrubs

dendron made a happy entrance into Great Britain, for it is one of the finest species known, and may develop into a tree forty feet high.

“When this most magnificent of our native shrubs covers whole mountain sides throughout the Alleghany region with bloom, one stands awed in the presence of such overwhelming beauty,” says an American writer. “It produces a tall trunk, and towers among the trees; it spreads its branches far and wide until they interlock and form almost impenetrable thickets, locally called ‘hells’; it glorifies the loneliest mountain road with superb bouquets of its delicate flowers set among dark glossy foliage scarcely less attractive. The mountain in bloom is worth travelling a thousand miles to see.”

The flowers are pale pink or white, and they add the crowning grace of fragrance to their charms. It has, however, been rather superseded in our gardens by more showy species—by hybrid forms in which it claims a share of parentage.

Still a decade later, a well-known nurseryman of Hackney, Conrad Loddiges, brought into England, probably from South Europe, a great novelty in the Pontic Rhododendron (*R. ponticum*), a very common native of the part of Armenia known as Pontus, hence its specific name. It was so much appreciated that, by the end of the century, it was described as “now become so extremely common”; indeed to this day its

The Evergreen Rhododendrons

purple blooms stand for the typical Rhododendron to most people, and it is our commonest evergreen, barring the Cherry Laurel. The only other Rhododendron which appears in florists' lists of the seventies and eighties of the eighteenth century is the little Alpine Rose, *R. ferrugineum*, whose leaves are a rusty red beneath.

With the nineteenth century the number of species to enter our country began rapidly to increase. Some came from America, some from China and Japan, others from India. Dr. von Siebold, the celebrated botanist of the Japan flora, relates that in 1826 he received a most precious present from the Prince of Satsuma, to wit, a certain Rhododendron (*R. Metternichii*) held sacred, and set in a rare and beautiful porcelain vase. This very plant had been brought by the Prince himself from the tombs of the Japanese Emperors at Nikko twenty years earlier, when he was making a pilgrimage there. Unfortunately, the plant died in the tropics as the botanist was endeavouring to bring it home, and only the vase remained to console him. It was not until nearly half a century later that, under better conditions of transit, it was found possible to bring this Rhododendron to England and show its purplish-pink flowers.

Sir Joseph Hooker's famous expedition to the Sikkim Himalayas in 1847 gave a great fillip to our

Beautiful Flowering Shrubs

knowledge of these shrubs, for in the Himalayas he visited a region where they are all in all. "They are the constant companion throughout every day's march," he wrote. The natives used them for all manner of purposes — fuel, poles for tents, to fashion stools, saddles, bowls and spoons; the very bark is pressed into service, as is birch bark in the Arctic regions, and the leaves serve as plates. He also introduced many interesting species into England, as, for instance, the handsome but very variable *R. barbatum*, and *R. fulgens*, both of which glow with blood-red flowers. To him, too, we owe the large-leaved, beautiful *R. arboreum*, one variety of which has its buds and the under-side of its leaves clad with silvery silken hairs, and from whose flowers—pink or white—the bees collect a honey that is reputed poisonous, though the natives make a jelly from them that is relished with impunity.

To-day we are acquainted with about fifty different species of Indian Rhododendrons, with sixteen species of American Rhododendrons, and with as many as one hundred and fifty species of Chinese Rhododendrons. Of these, just over a hundred are in cultivation at the present time. But besides these there are endless hybrid forms manufactured by gardeners and rejoicing in the most fanciful of names, a list of which may be seen in any nurseryman's catalogue. Five chief points

RHODODENDRON
Rhododendron arboreum

Domesticated Growing Shrubs

Knowledge of these shrubs, found in the Himalayas, is
valuable in regard to the use of all in all. They are
the constant food of the people of every day's use.
The shrubs are of great value for all manner of
purposes—both for the use of the people and for
saddles, bows and arrows. The very bark is pressed
into service as a kind of leather in the Arctic regions,
and the leaves are used as a kind of paper. He also introduced
many interesting species of shrubs, and in particular
the handsome *Salix* and *Salix* and *Salix* and
Salix and *Salix* and *Salix* and *Salix* and *Salix* and
To him, the *Salix* and *Salix* and *Salix* and *Salix* and
Salix and *Salix* and *Salix* and *Salix* and *Salix* and
and from which the people of the Himalayas
collect a large quantity of the bark and leaves
and make a very good kind of paper with
facility.

To-day on the mountains of the Himalayas
species of *Salix* and *Salix* and *Salix* and *Salix* and
of American *Salix* and *Salix* and *Salix* and *Salix* and
hundred and fifty species of *Salix* and *Salix* and
Of these just over a hundred are cultivated in the
present time. The *Salix* and *Salix* and *Salix* and *Salix* and
hundred and fifty species of *Salix* and *Salix* and
in the most fertile of the Himalayas, of which may be
seen in any of the *Salix* and *Salix* and *Salix* and *Salix* and

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are aimed at in producing a really first-rate Rhododendron by cross-breeding. It must be hardy to withstand our winters; its foliage must be bold and of good size; the flower-clusters must be large, compact and of a conical outline; the colour of the flowers should be attractive; finally, the shrub should not flower much before June, or it is liable to have its beauty dashed by late frosts.

It is impossible to give any full indication as to what special varieties should be encouraged in a garden, there are so many that stand on an equal footing of merit, but one may perhaps mention as representative :

Snowflake, with white flowers.

Pink Pearl, with pale pink flowers.

Broughtonii, with carmine flowers.

Doncaster, with brilliant red flowers.

Old Port, with purple flowers.

Sappho, with "blotched" (white, blotched with purple) flowers.

The common species, *R. ponticum*, is difficult to beat for typical purple blossoms.

R. catawbiense, "perhaps the most valuable shrub for ornament ever introduced" into British gardens, is chiefly responsible, through its varieties and the hybrid forms that have been bred from it, for a large, very hardy and altogether the best group of garden varieties that are early flowering, viz. late May and June.

Beautiful Flowering Shrubs

R. ponticum has also played a considerable, if not quite so important a rôle in the evolution of the garden Rhododendrons as we now know them. The hybrids bred from it are not quite so hardy, have narrower leaves, and are inclined to be more wild in growth than are those derived from *R. catawbiense*. *R. arboreum* is the parent from which all the red—not purple or pink—garden hybrid Rhododendrons get their brilliant hue; while the not very hardy *R. griffithianum*, with its fragrant, unusually fine pink-flushed flowers, is responsible for some of our most beautiful varieties, e.g. Pink Pearl.

The course of the development of the Rhododendron throughout the year is well worth watching. At the outset of the spring the tip of every branch holds up a great bud that stands out noticeably against the dark stiff foliage, for it is clad in the palest shining scales, the upper ones of which show a particularly silver sheen. The bud swells until it is the size of a big filbert nut, and here and there the scales begin to part and reveal a hint of colour—pink, purple, crimson or white. The outermost scales then suddenly develop a tendency to fall, and soon the knob-like bud is transformed into a globular head of flower-buds, like closed paper bags—all alike, all the same size, and each subtended by a long silvery scale. In the next stage the petal bags slightly open at the mouth, and often a

The Evergreen Rhododendrons

long thin column tipped with a rounded knob—the style with its receptive stigma—is thrust out; perhaps, too, a suggestion of yellow stamens can be seen within. All together they act, and next day, perchance, the great glorious head of flowers opens to its full beauty. There is no admixture of buds and flowers in various stages of development, as in the flowering currant, for instance, to detract from the massed beauty; full and complete, it all comes together, it all passes together.

Each flower boasts a ring of five petals joined to form a five-lobed bell. Their bases are hollowed into five deep honey-pits which encircle the seed-case, the uppermost one being particularly large and glistening with the honey that oozes from a nectary that lies round this seed-case.

The stamens, with smallish yellow heads and with filaments of varying length, project within the bell and form a sort of platform. Through them, and often longer than any, is the style-column from the seed-case; occasionally, however, it is quite short. The two pollen boxes that make up the head of each stamen open by a circular orifice at the summit, and out through it the sulphur-coloured pollen oozes, the grains of the pollen being joined together into fours by infinitesimal threads. Under a simple lens these round holes and the issuing pollen can be very distinctly seen.

Beautiful Flowering Shrubs

The humble-bees are the *Rhododendrons*' correct visitors; obviously the flowers are built on lines to admit visitors of size and distinction, and when these enter the glowing cavern of the petals, they first strike upon the stigma knob (if the style projects) and then alight upon the stamen platform. If the knob is in the sticky stage—and it can be very sticky—then any pollen on the visitor's body is transferred to it; so, too, the pollen from the stamens adheres to body and legs as the bee clammers about the platform drinking its fill from the honey-pits. The ovary down in the centre contains five chambers filled with minute seeds, which are fertilised by the contents of the pollen grains percolating to them through the long style.

Then the flower-posies wither, the petals fall away, but the seed-case becomes hard and almost wooden. In late autumn, or perhaps not till early spring, its walls split down five fissures, and the tiny brown seeds escape. In the centre of the five fissures is still the central column round which the seeds were ranged, and probably it is topped with the mummified remains of the style.

The new leaves of any shoot for the year are rolled up together, all in a sharply pointed bud. As the bud bursts in full summer, each leaflet is seen to be curled backwards and lengthwise into two coils which meet on its midrib. These coils slowly unwrap, and

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the leaves, which at first all stood up closely side by side, lay themselves back and spread their faces to the sunshine. Their texture is hard and their juices astringent and no animal will browse on them, nor will even rabbits attack them. Decoctions of them, however, have been used for medicinal purposes.

Azaleas are classed by botanists among the Rhododendrons and carry the same generic name, but gardeners prefer to keep the two separate and retain the latter name for the evergreen shrubs of laurel-like foliage, and to confine the name Azalea to those shrubs of very similar character which lose their foliage in the winter. The early part of June is the time to see Rhododendrons in their fullest beauty.

Soil and Cultivation.—Sandy peat enriched with a little manure or decayed leaves is the Rhododendrons' ideal soil, but they will grow in soil of considerable variation of composition, so long as there is no lime in it. Lime they will not tolerate.

They require little pruning; any cutting should be done in February.

Rhododendrons that are pure-bred species may be grown (in April or May) from seed, which, being very minute, should be scattered on fine peat and sand and covered with a very little sand. The seeds germinate in a few weeks, and can then be pricked out into pans and placed in a frame.

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Grafting is the method of propagation usually employed. This should be done either in the three first months of the year or in August.

Layering, too, is a method frequently used, while they may also be raised from cuttings. It is, of course, not possible to grow the hybrid garden forms from seed, as the seedlings are not then certain to reproduce their parents' characteristics.

XIX

THE DEUTZIAS

- Deutzia crenata*, or *D. scabra* . "The Pride of Rochester" (in
double-flowered variety)
- „ *corymbosa*
- „ *discolor*
- „ *gracilis* Japanese Snow Flower
- „ *Lemoinei*=*D. gracilis* × *D. parviflora*
- „ *longifolia*
- „ *parviflora*
- „ *Wilsoni*

CLOSELY allied to the syringas (*Philadelphus*), though more delicate and graceful, are the Deutzias—shrubs that in various species spread over Central Asia, China and Japan, and are a gift to our gardens from those regions. But they suggest nothing of that hint of romance, that association with the past, that the strong scent of the syringa always seems to recall so vividly, for in addition to the fact that they are practically scentless, our actual acquaintance with them is less than a century old, and our intimate knowledge of them much more recent still. Thunberg found them growing in India and Japan when he travelled there in the latter half

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of the eighteenth century, and in his record of the "Flora of Japan" (1784) he described and named them. And "Deutzia" is yet another instance of a memorial name given in gratitude, for it keeps the memory green of worthy Senator Van der Deutz, of Amsterdam, who, a true naturalist at heart, encouraged by word and substance the botanist in his adventurous and even dangerous explorations, and Thunberg adopted this graceful way of complimenting his patron.

Apparently the first time a living *Deutzia* was seen in England was in 1822, when a certain John Reeves is recorded as having imported "a new hardy shrub of Fakon," to wit *Deutzia scabra*, now commonly known as *Deutzia crenata*, and the species most generally found in our gardens to-day; but it took time to become known, for in 1838 the *Floreicultural Magazine* records it among the new plants. It is one of the hardiest of shrubs, bold and handsome, and in its native land is commonly seen forming long hedges in company with honeysuckles, viburnums and the spindle trees. Its leaves are deciduous, their simple outline finely toothed. Almost stalkless, they stand facing one another in pairs, and their surface is coated with minute, roughish hairs which give the plant its specific name (*scabra*—rough), and cause the foliage to be used by Japanese joiners for smoothing and polishing their work.

The Deutzias

The flowers are white—all the Deutzias have white flowers, though occasionally they may be tinged with pink or purple—and they are gathered into clusters. The Deutzias belong to the family of the *Saxifragaceæ*, and there are five united sepals, five separate petals, ten stamens within the spreading petal bell, and a central seed-case with three club-shaped columns rising from it. The filament of each stamen is white and broad, with a pair of shoulders, and often the shoulders of the ten touch, so that a bell is formed within a bell. In this case the anthers rise each on a short stalk, as a head on a neck, between the shoulders. Round the top of the seed-case glistens a thick ring of orange honey tissue, which gives a central touch of colour when one peeps into the bell and provides a lure for bees, the Deutzias' chief visitors. The fruit is a capsule containing several seeds. A double-flowered variety, *Deutzia crenata flore pleno*, where each blossom is a little white rosette, is often seen in gardens, sometimes with the edges tinged with purple. "The Pride of Rochester" is also a lovely double-flowered variety botanically known as *D. c. candidissima*.

An alternative species, almost as often cultivated, is *Deutzia gracilis*—the Japanese "Snow Flower"—where the branches are more slender and graceful and the foliage more finely cut. This, too, came from Japan, being sent here in the middle of the nineteenth century

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by that Thomas Lobb who is commemorated in the name of the genus "*lobbia*" of the *Aristolochias*. It is said that British gardens were enriched with more beautiful plants of Indo-Malayan origin by him than by any other single collector of his own or any time. His enthusiasm in species hunting at one time led to his losing a leg in that pursuit. When this *Deutzia* was first exhibited in 1851 it was greatly admired and awarded a silver medal for its beauty by the Royal Botanic Society. Its flowers are pure white and in clusters, like those of the last-mentioned species, but they appear rather earlier in the spring. A long low hedge of it is really a charming sight in May days, and recalls the usual method of growth in its native land. This species is the one usually employed for forcing, and makes very desirable pot plants for winter greenhouse flowering. *Deutzia corymbosa* has beautiful clusters of crowded white flowers, fragrant like the hawthorn, and is a free-growing plant from the Himalayas, whence it was introduced in 1830.

The early flowering *Deutzia parviflora* from China, with smaller white flowers in flattish clusters, is chiefly interesting because, with *Deutzia gracilis*, it is responsible for the parentage of the hybrid *Deutzia Lemoinei*, frequently now seen in gardens and a distinct addition there.

Several new species have been introduced to Europe

DEUTZIA
Deutzia crenata

Umpqua
California



The Deutzias

in quite recent years, partly through the agency of Jesuit missionaries who have constantly sent seeds back to this country, and partly by Mr. E. H. Wilson, an account of whose travels as a plant collector has recently been published. For instance, the *Deutzia* known by his name, *Deutzia Wilsoni*, is quite new. It claims to have the largest flowers of any member of the genus, and they are held in erect thyrsoïd form instead of being in drooping clusters. *Deutzia discolor* with purplish flowers, listed as a novelty in 1904, from the province of Hupeh in Central China, and *Deutzia longifolium*, with lovely rose-flushed blossoms, introduced in 1908 from the same region, were both first collected and described by the missionaries, and later introduced to England by Mr. Wilson.

Soil and Cultivation.—One drawback to the *Deutzias* is that, unless they are properly cut back in summer, they are apt to appear in very untidy guise in the following spring, with a quantity of dead bare twigs about them. The flowers come on the wood of the previous year's growth, so the pruning must not be done until flowering is over. And on no account must new shoots be cut away, as they carry the potential buds for the following season. These shrubs should have a moist, light soil and a moderately shaded position. They can be increased by division, or by cuttings of ripe wood in summer or autumn.

XX

BROOMS AND GENISTAS

<i>Cytisus scoparius</i>	Common Broom
<i>with varieties C. s. andreanus</i>	
" " <i>C. s. sulphureus</i> . .	" Moonlight Broom "
<i>Cytisus albus</i>	White, Spanish, or Portuguese
<i>var. incarnatus</i>	Broom
" <i>præcox</i>	Warminster Broom
" <i>nigricans</i>	
<i>Spartium junceum</i>	Yellow Spanish Broom
<i>Genista ætnensis</i>	Etna Rock Broom
" <i>cinera</i>	
" <i>virgata</i>	Madeira Broom
" <i>hispanica</i>	Spanish Gorse

A HOST of brilliant foreign shrubs find place in our gardens, but a native shrub—the Common Broom—challenges the gayest of them for supremacy. Wherever it flowers it lights up the garden like a torch, its whip-like shoots becoming rods of pure gold,

"Yellow and bright as bullion unalloyed
Her blossoms,"

as Cowper said, the brilliance undimmed by any dilution or overshadowing of green. For the Broom is a so-called "Switch plant," and the leaves, each consisting of three minute leaflets, are almost negligible and

Brooms and Genistas

totally insufficient to carry on the life processes of the plant; hence the supple stems develop green tissue and water pores (or stomata), and, in fact, do much of the work that should be wholly done by the leaves. The reason for this is economy, it is a pure measure of thrift, for the Broom is fitted by Nature to grow in poor dry soils where food is scarce and moisture small, and this fact should be remembered in cultivation.

The yellow flowers, so large in proportion to the leaves, are of the pea type—the Broom belongs to the *Leguminosæ* family—and the corolla is made up of a big upstanding “standard” petal, two wings, and a keel composed of two petals, the wings and keel in a newly opened flower being ingeniously interlocked. (If a flower be dissected the blunt hooks and mound and socket can be seen at the base of wing and keel petals.) Within the keel lie ten stamens, five long, five shorter, the lower part of their filaments being united into a tube, the upper part being distinct. Inside the tube is the pod, as yet in miniature, and carrying a column longer than the longest stamens. No honey lies in the flower, but many kinds of bees visit it, and during their visits an interesting little ceremony is performed. As in the gorse, when one alights, straddling the keel, its weight depresses both keel and wings, but their interlocking gives under the shock and they fall limply, causing the ovary column and the stamens

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to spring up. The column immediately rubs on the bee's abdomen and is smeared with any pollen that has been lying there; the stamens, on the other hand, in their sudden rise throw up a little cloud of pollen that dusts the abdomen. When the bee departs there is no readjustment of parts, the keel and wings still hang limply, the whole flower yawns, a sign to all and sundry that it has played its part for good and all. This minute explosion can be produced and watched by merely depressing the keel of a newly opened flower with a pencil or the finger.

The little green pod grows and blackens, and then it, too, has its day of explosion. One day, in the heat of the July sun, it suddenly cracks with vehemence and shoots out its seeds. Sitting in the garden near a Broom bush, the succession of "crack cracks" suggests somebody cracking nuts or a bird pecking. There is a very old superstition that the Broom cracked its pods as a warning when Judas entered the Garden of Gethsemane.

In the middle of the 'eighties a M. Édouard André found among some Common Broom in Normandy a plant that was a variation of it, a "sport" or "mutation." In this sport the wing petals instead of being a golden-yellow were dyed a rich crimson-brown, while a touch of the same colour was also on the standard. He secured the plant, cultivated and propagated it,

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and it was the parent of the widely known and now much favoured *Cytisus s. andreanus*, to be found in so many gardens. At a little distance this variety appears to have yellow flowers with red-brown centres, so that it is particularly striking and rich looking.

Another variety, the "Moonlight Broom," or *C. s. sulphureus*, has very pale yellow flowers, but is not often seen nowadays, though it was described seventy years ago. Neither of the varieties comes true from seed, as the tendency is to revert to the primitive Common Broom, so it is best in both cases to take root plants for propagation.

The White, or Spanish, or Portuguese Broom is also a striking and pretty shrub in a garden in April and May days. The fine supple shoots stand more or less in parallel lines, and are covered with white blossom. As its name implies, it comes from the Iberian Peninsula, where common superstition says that it is the juniper bush under which Elijah sat. If so the prophet could not have chosen it for any shade it might give. Whereas the Yellow Broom is perhaps seen best massed together, the White Broom looks best alone on a lawn, or intermingled with the yellow. Though John Gerard described it in his Herball of 1632, he specially mentioned that it was "a stranger in England"; and, in fact, it was not introduced here until 1752.

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Cytisus præcox, a hybrid between this Broom and a little-known south European yellow Broom—*C. purgans*—is another most desirable garden shrub, being a mass of the loveliest pale lemon-coloured flowers in the early spring. It has, however, a rather heavy close scent. It is best grown in isolation, so that the full gracefulness of its supple shoots can be seen. It first appeared spontaneously among some seedlings of *C. purgans* in a nursery garden at Warminster, 1867.

There are many other species or hybrids of Broom, but it may suffice to name now *C. nigricans* as worthy to rank among the best. It is so called either because it is black-rooted or because it turns black when dried. It came here from Austria about 1730, but never seems to have gained the popularity it deserves, for its hardiness, its floriferousness, and for the fact that it blooms in midsummer when most of the Brooms are over.

All sorts of traditions and superstitions have centred round the Broom. It was the "Planta-genista," the badge of the Plantagenets chosen by Gefroi, Duke of Anjou, father of our Henry II., because he saw a plant of it firmly grasping the rock and upholding the crumbling soil. In olden days a bunch of its twigs was generally used by housewives for sweeping, hence the name "broom" still used for a brush, and an old proverb ran, "Sweep the house with the Broom in May, and you'll sweep the luck of the house away," or,

COMMON BROOM

Cytisus scoparius

Brooms and Genistas

more gruesomely, "you'll sweep the head of the house away," the rationale of the proverb being difficult to follow.

The old herbalists made much use of it both for "salletts" and medicine. "Broome floureth in the end of Aprill or May, and then the young buds of the floures are to bee gathered and laid in pickle or salt, which afterwards being washed or boyled, are used for sallads, as Capers be, and be eaten with no lesse delight," said Gerard. He further adds, "That worthy Prince of famous memory Henry 8, King of England, was wont to drinke the distilled water of Broome floures, against surfets and diseases thereof arising." Indeed, the rather bitter decoction from Broom twigs was once in great request as a cure for almost every disease under the sun, particularly liver troubles. This same bitter principle that runs throughout the shrub is, of course, a method of defence devised by Nature to secure the plant from the onslaughts of browsing animals.

The Spanish Broom, or Rush Broom—*Spartium iunceum*—has particularly large yellow flowers, and is further distinguished by its shoots being practically leafless—hence its name, "Rush Broom." Its generic name, *spartium*, signifies cordage, that use being often found for the pliant twigs. It is a very vivid, tall-growing shrub, which deeply roots itself and flourishes

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in the dryest situations, and flowers in the late summer and on into the autumn. There is a double variety. This broom grew in English gardens in Queen Elizabeth's day, and its flowers and seeds were given with honey as an emetic by the herbalists of the time.

The *Genistas* (*Gen* signifies "a small bush" in Celtic) are very closely allied to the Brooms, and grow under similar conditions and, indeed, are difficult to distinguish from them. There are very many species, but the chief shrubs for garden purposes are the Rock Broom, *Genista aetnensis*, which grows on the slopes of Mount Etna in Sicily and was brought to England in 1816, one of the tallest and most tree-like of its kind, being often fourteen to sixteen feet high, and rather gaunt; the *Genista cinera*, a graceful slender shrub with rather smaller flowers; and *Genista virgata*, which came from Madeira in 1777, tall and rather straggling. All three carry sweet-scented yellow flowers and can be seen with great effect at Kew in June massed in their respective beds making blazes of colour that are visible from afar. *G. cinera* has few leaves, *G. virgata* is better off in this respect. All these *Genistas* seed freely and grow well from seed.

The so-called Spanish Gorse—*Genista hispanica*—"one of the most indispensable shrubs in the south of England," says Mr. Bean, is really a *Genista* that has taken on the defensive attitude of a gorse and

Brooms and Genistas

become stiffened to a certain degree. It is a smaller shrub than the gorse, and of particularly rounded and compact growth, forming evergreen balls and cushions of the neatest contour. In May and June its surface is simply thickly overlain with a sheathing of golden bloom. Prior to the blossoming it sends up from the end of every branchlet bright green shoots that are soft and tender among the underlying sharpness and carry a number of oval, flat leaves which, as in the case of the infant gorse already referred to, show the lines upon which the Spanish gorse was originally designed before the necessity of defence was thrust upon it. It was introduced to English gardens in the middle of the eighteenth century.

Soil and Cultivation.—The Brooms only require a light sandy soil, in fact, a rich soil tends to lead to their deterioration, inasmuch as in it they are likely to become rank and poor flowering. A sunny situation means much to them, and they do excellently on dry banks. It is far better to grow them from seed, as the plants are much healthier and more vigorous. They are occasionally grown from cuttings struck in sand, but they require well cutting back in their early days to prevent straggling.

XXI

SYRINGA, OR MOCK ORANGE

PHILADELPHUS

<i>Philadelphus coronarius</i>	.	.	Common Syringa, or Mock Orange
" <i>gordonianus</i>	.	.	Gordon Syringa
" <i>grandiflorus</i>	.	.	Large-flowered Syringa
" <i>hirsutus</i>	.	.	Hairy Syringa
" <i>microphyllus</i>	.	.	Small-leaved Syringa
" <i>Lemoinei</i>	= <i>P. coronarius</i> × <i>P. microphyllus</i>		

THE shrub of fragrance! A joy to many, anathema to some, the Common Syringa has one of those vivid personalities that strongly attract or strongly repel. "Dear Syringa!" says E. V. B., "best hated and best loved of flowers. The lovers of it hail its blooming with enthusiasm, and break off sprigs to wear as they pass the bush, whilst others will go the other way round to avoid passing near." It is one of the few shrubs—one could count them on the fingers of both hands—that have graced English gardens for centuries. Gerard, in Queen Elizabeth's days, tells us that he had it growing in his garden "in very great plenty"; and a curious little flashlight on a certain June evening over three hundred years ago is given us when he speaks of the salient characteristic of the shrub, "A pleasant sweet smell, but in

Syringa, or Mock Orange

my judgment they are too sweet, troubling and molesting the head in very strange manner. I once gathered the floures and layed them in my chamber window, which smelled more strongly after they had lien together a few houres with such an unacquainted savor that they awakened me out of sleepe, so that I could not rest till I had cast them out of my chamber." Parkinson, too, in the seventeenth century, describing the Syringa in his "Earthly Paradise," speaks of the single White Pipe Tree as "of a strong full or heady sent, not pleasing to a great many, by reason of the strange quicknesse of the sent."

This scent so closely resembles that of the orange—

"The sweet Syringa yielding but in scent

To the rich orange."

(Mason, "English Garden")—

that a common name of the shrub is "Mock Orange." Some species, however, lack it; for instance, the *Philadelphus grandiflora*, which partly on this account, but chiefly because both its flowers and its leaves are built on larger lines than the common species, is now frequently planted in gardens. This species is a native of North America, and was first brought to England a century ago. Another North American species, *P. gordonianus*, appeals, however, more to the lovers of the familiar Syringa type, for while the flowers are almost as large as in the preceding species, *P. gordonianus* possesses

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also the characteristic *Syringa* scent. The specific name, "*gordonianus*," refers to a certain Robert Gordon who was foreman of the arboretum at the Horticultural Society's Garden, Chiswick, and who specially interested himself in this genus. This plant was first brought to England in 1823.

In *Philadelphus hirsutus*, from Tennessee, the scent is there but less strong, and the flowers are much smaller. When seen at its best this is so attractive a shrub that it is remarkable that it is not more grown, but perhaps it is rather shy of appearing at its best. As a whole the shrub is built on more delicate lines than other *Syringas*; its leaves are small, neat and hairy on their lower surface (hence its name—*hirsutus*), and their margins are toothed. The branches are slight and droop gracefully, and the little, cream, cup-like flowers are set in groups of three, a group to each leaf, the whole effect being that of a mass of floral wreaths. It is a very characteristic species, and specially to be recommended for small gardens.

A like recommendation applies even more strongly to the miniature *P. microphyllus*, which has tiny myrtle-like leaves and quite small flowers. Though it is scented, the fragrance is rather different from that of its relatives, "more like a combination of ripe apple and quince," opines the author of "The English Flower Garden." It is of comparatively recent introduction,

Syringa, or Mock Orange

owing its advent here to Professor Sargent about 1883, and is specially interesting because, crossed with the Common Syringa (*P. coronarius*), it has given rise to a delightful hybrid that appears to have all the virtues and none of the vices of other species. This desirable individual—*P. Lemoinei*—so named because it was the well-known French botanist, M. Lemoine, of Nancy, who called it into existence, is slender, with a free supple branching, that carries a great profusion of smallish white flowers and pointed leaves. Its fragrance is very sweet, but without any of the heaviness and “molestation of the head” that Gerard found so trying. In fact “it represents,” as Mr. Bean says, “one of the greatest successes ever achieved by the hybridiser’s art, being the forerunner in gardens of a new and distinct type of Philadelphus, and the first of a most beautiful race of summer flowering shrubs.” In August, when the flowering season is over, the flowering shoots should be cut right back; this keeps the shrub round-topped and dwarf, and the new spring shoots of the current year will furnish the flowers for the next season.

P. Lemoinei is now found in many varieties, with both single and double flowers, and has thus furnished a new set of charming shrubs to make the garden still gayer in midsummer.

The Syringas belong to the family *Saxifragaceæ*, and are closely allied to the Deutzias. When their

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sharply pointed buds open, four green sepals lie back and, alternating with them, four petals "ivory pure" as Cowper says, form a wide shallow cup. Since each petal narrows at the base, the sepals beneath show between so that the gaps form a green cross at the bottom of the white cup. There are many stamens whose yellow heads are still closed when the bud unfolds, while in the centre four green columns, or styles, rise from a seed-case lying below the attachment of the petals. On the seed-case lies a disc of half-concealed honey. Naturally, with honey and scent so lavishly provided, insect visitors are not lacking, and though bees chiefly visit and fertilise, yet beetles, flies, moths and butterflies all come in their turn.

Unlike the stamens, the styles are ready to take their share in the fertilisation process directly the bud opens, so the earliest visitors, bringing pollen on their bodies, perform the office of fertilisation. A little later the outer stamens open their heads and discharge their pollen, their example being followed successively by those within. At this time insects carry away as well as bring pollen to the flower visited. Finally, since the stamens approach very close to the styles, and bend over them, the escaping pollen falls on to them, and hence self-fertilisation will be effected if by any mischance cross-fertilisation has not been accomplished.

The fruit, a dry capsule, contains a number of seeds.

Syringa, or Mock Orange

The leaves are always simple and in pairs, and in the Common *Syringa*, at least, they taste when bitten like cucumber.

The woody stems are distinguished by a grey bark and a considerable amount of pith. The lilacs have also the same character, and hence in olden days the two shrubs were classed together and called "*Syringa*" (from the Greek), "that is to say a Pipe, because the stalkes and branches thereof, when the pith is taken out, are hollow like a Pipe," as Gerard carefully explains. The Mock Orange was known as the White Pipe or the Pipe Privet, and the lilac as the "Blew Pipe," from the colour of the flowers. But when scientific botany took the matter in hand it was necessary to separate the two groups, as they really belong to two completely different families, hence Linnæus kept the lilacs or the "Blew Pipes" under the heading *Syringa* (family *Oleaceæ*), and put the White Pipes into another family—*Saxifragaceæ*—under the generic name *Philadelphus*. (The Athenians called some plant *Philadelphus*, but its exact identity is lost.) The result of this simple operation has been confusion ever since, for popular feeling *insists* on calling the *Philadelphus* by the familiar term "*Syringa*," and will *not* adhere to the suggested substitute of "Mock Orange," while the botanists retain the term *Syringa* as their nomenclature for the lilacs. Therefore it is

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continually necessary, when one uses the term *Syringa* in company at all botanical, to explain carefully whether one is speaking from the homely or the scientific point of view.

A pretty legend is woven around the *Syringa* and its connection with pipes. *Syrinx* was a nymph in Arcady with whom the god Pan fell in love. To avoid him she fled to the river, and prayed the water nymphs to help her. So they changed her into a reed. Therefore, as Pan could not have her for his earthly love, "Thou," he said,

"At least shall be the consort of my mind,
And often, often to my lips be joined:
He formed the reeds, proportioned as they are,
Unequal in their length and waxed with care,
They still retain the name of his ungrateful fair."

(Dryden.)

Soil and Cultivation.—The *Syringas* should be grown in a good garden soil, and in a position open to a fair amount of sunshine if they are to produce their fragrant flowers in abundance. Pruning should consist of cutting out any old wood that has already flowered. The blossom of each spring is borne on the shoots of the previous year; therefore the cutting off of the season's shoots in the autumn means no flowers the next spring. They are best propagated by taking cuttings of young wood and striking these in a cold frame.

XXII

THE ESCALLONIAS

Escallonia floribunda, or *E.*

Montevidensis

Escallonia macrantha

„ *philippiana*

„ *rubra* The Red Escallonia

„ *langleyensis* = *E. macrantha* × *E. philippiana*

BEST to realise the possibilities of the Escallonia, one must see it stretching as long hedges in Ireland and southern England, environed by the moisture and equableness of the sea. There, fringing the roads, its shining close-set foliage makes the most gleaming of trim green lines year in and year out, winter and summer alike, except indeed for an occasional brief spell when it bronzes as it resents the action of some unduly bitter north-east wind. At times, too, the density of its branching gives an Escallonia hedge a rôle of definite usefulness, for it serves as an admirable shield in such places, for instance, as the Scilly Isles, where early spring bulbs by the million must needs be sheltered from the buffeting of too strenuous sea-breezes. Farther north and east the use of these shrubs as actual hedges is not

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generally possible, for they have not the hardiest of constitutions; but even in less favoured climates, as individuals they form desirable members of the warmer nooks in many a garden.

The Escallonias are a group of South American shrubs, and their name calls to mind those now almost forgotten days of the end of the eighteenth and beginning of the nineteenth centuries, when the practically unknown flora of South America was engaging the attention of a devoted band of botanists—Spanish, French and English. The Spanish traveller, Escallon, whose namesake they are, was perhaps one of the least important of these botanists, and he is now only remembered as a pupil and companion of a really notable man, Don José Mutis, Astronomer Royal of Santa Fé de Bogota, who was director of a special botanical expedition to New Granada (now called Colombia), and who added greatly to the sum total of botanical science. Indeed, M. Humbolt, the French scientist, refers (1808) to him as "*ce grand botanist dont les bontés nous imposent une reconnaissance éternelle.*" It is said that Escallon was the first to find a specimen of an Escallonia, and therefore Don Mutis named the shrub after him; but the fact is that, in the general investigation then going on, the same plants were recorded as "finds" in different parts by different botanists. Thus, *Escallonia floribunda* was certainly

The Escallonias

discovered by the French botanists MM. Humbolt and Bonpland, 8,400 feet up in the Andes, and a description written of it; but it was also doubtless included with other species in that wonderful collection of 130,000 dried specimens that was made about 1830 out in South America by Hugh Cuming, F.R.S., the collector for Sir William Hooker, then at Kew. Cuming was a most thorough and enthusiastic collector, and he went enormous distances along the western coast of the continent in his travels. With him must be associated the name of Archibald Menzies (already referred to in the account of the flowering currant, *see* p. 17), by then a veteran; Cruikshanks, another Kew collector; and a Dr. Gillies, who, we are told, "carried with him a degree of scientific knowledge and a philosophical spirit of inquiry such as have fallen to the lot of few travellers."

But though they collected specimens and dried them for dispatch to England, it was often left to others to introduce the living plant. Thus, *Escallonia macrantha*, chief of our hedge species, did not arrive in this country alive until William Lobb, collecting for the Veitches, sent it in the early forties. It flowered first here in 1848, and was exhibited as a rarity in the Garden Exhibition of the Horticultural Society in that year, though *Escallonia floribunda*, another hedge species, and *Escallonia rubra* were here fifteen years earlier.

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The fourth species named at the head of this chapter, *E. philippiana*, is a more recent introduction. It was found in Valdivia by Richard Pearce (collector to Messrs. Veitch), and sent home by him about 1873.

When we turn to examine their individual characteristics, we find that all the Escallonias have simple leaves rather thick and very resinous, with resin glands scattered all over the leaf's tissue, fragrant and often gummy to the touch. The margins are very finely notched, and the leaves alternate on the stem. All, except *E. philippiana*, are evergreen. The blossoms are set in clusters on the ends of the branches. In *E. macrantha* they are crimson, and there may be forty or more together, the youngest at the top. The buds are long rounded objects, specially vivid at their blunt tip, and clasped at the base by a five-pointed calyx, whose green is tinged with redness. The clusters are drooping, and the flowers tend to face downwards. As they open, the upper part of the five separate petals turns back until the circumference of the face of the flower is the size of a threepenny bit. Behind it is the red petal tube, with the points of the calyx now standing a little away from it. At the mouth of the wide tube the yellow heads of six stamens can be seen. On pulling off the petals the stamens are found standing in a ring round a seed-case with a green-topped column. After fertilisation

ESCALLONIA

Escallonia macrantha



The Escallonias

the petals and stamens fall, but the calyx persists as a guard to the fruit, which proves to be a dry capsule containing several seeds. The general plan of the flowers ranks the plant in the family *Saxifragaceæ*, with such diverse and unlikely members of the shrub world as the deutzias, flowering currants, hydrangea and mock oranges (*Philadelphus*). This particular species begins to flower early in the spring, and continues to blossom right on through the summer. It is the hardiest and best for general planting.

Escallonia rubra—the so-called “Red Escallonia”—has also red flowers which, however, appear later in the season, in midsummer and autumn. It is somewhat variable in its characteristics and not to be so much recommended as the previous species.

Escallonia floribunda, often known as *E. montevidensis*, has attractive white flowers which will last fresh in water for ten or twelve days. Their yellow stamens are rather prominent and give a golden touch to the centre of each blossom, while the hawthorn-like fragrance of the flower clusters adds to the charm of this shrub, a charm all the more appreciated because it is at its height in late summer and autumn. Unfortunately, the shrub is not very hardy.

Escallonia philippiana does not attain to the man's height and more of the other three species, but it is a most bright little shrub, whose tiny, dark, deciduous,

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leaves, set on thick stiff stems, are largely obscured by the lavish production of white hawthorn-like flowers. (They form, in fact, an almost bridal garment for the shrub during July and August.) It is very fairly hardy, doing well round London, for instance, and is much to be recommended for small gardens where the larger shrubs are apt to be overpowering.

Finally, one must notice the hybrid *E. langleyensis*, which was raised in the Veitch gardens at Langley in 1893 by fertilising the ovules of the above *E. philippiana* with pollen from the darkest variety of *E. macrantha*. The result of this crossing between these two hardiest of the Escallonias is that it follows the male parent in bearing distinctive bright rose-carmine flowers, and the female parent in being of compact growth and in carrying small dark leaves, and both parents in possessing the quality of considerable hardiness. It is more graceful and supple than most Escallonias, and its flowers are borne on the upper side of the branches.

Soil and Cultivation. — Well-drained, sandy loam, not too rich, is the best soil for these plants, and they should be placed in positions that are not exposed to cold winds. They are easily propagated by cuttings, taken preferably in August, or by layering. Pruning of their long shoots is desirable, especially in *E. rubra*, in early spring.

XXIII

THE BUDDLEIAS

<i>Buddleia globosa</i>	Orange-ball Tree
„ <i>variabilis</i>	
<i>var. magnifica</i>	
„ <i>veitchiana</i>	
„ <i>Colvillei</i>	
„ <i>lindleyana</i>	
„ <i>nivea</i>	
„ <i>officinalis</i>	

THE scent of honey lay heavy on the air, dominating the whole atmosphere as it wafted from the long, gorgeous flower spikes on the branches of a tall shrub that was almost a tree—such spikes of flowers, too, suggesting a luxuriance tropical, exotic—spikes more than a foot long and two or three inches thick in the biggest part, each a revel of tiny mauve flowers with orange-red centre, a thousand, fifteen hundred, two thousand even, going to the making up of each of these glorious clusters. The habit of the shrub, the leaves with their dark green surface and silvery back, even the strong scent proclaimed a *Buddleia*—were they not once known as “Honeycomb Trees”? But far indeed in appearance are those purple spikes removed from the bright orange balls of the

Beautiful Flowering Shrubs

Common Buddleia, the "Orange-ball Tree," for this shrub of transcendent magnificence is the new Purple Buddleia, *B. variabilis*, which not two decades ago was first brought into this country by Mr. E. H. Wilson from the province of Hupei in Central China.

Our original Buddleia — *Buddleia globosa* — the Orange-ball Tree, has been known to us for nearly a century and a half, to be precise, ever since 1774, when Messrs. Kennedy and Lee—well-known nurserymen of those days—imported it from its home in Chile and offered it—at a price—to an admiring public. "Most beautiful of all (flowering shrubs) . . . is the *Buddleia globosa*. . . . When June draws to its close, it is laden with thousands of blossoms like little golden oranges, and fills the air with honied scent," was Bright's verdict as he surveyed it in his Lancashire garden a century later. Its rather uneuphonious name was given to it by an English botanist, Dr. Houston, as an appreciation of the still more uneuphoniously named Adam Buddle, one time Rector of Farnbridge in Essex, and later a Reader at Gray's Inn, where he died in 1715. The rector's claim to botanical remembrance lies in his herbarium, his "Hortus Siccus . . . Buddleanus sive Methodes," now in the Sloane MSS. at the British Museum, but he would certainly long ere this have sunk into oblivion had not immortality been conferred upon him by the naming of a shrub.

The Buddleias

This *Buddleia* is remarkable for its foliage as well as for its ball blossoms. At the outset the spring buds are of surpassing size and beauty and are very characteristic, for each of the branches ends in a long white tip, whose silveriness is in striking contrast to the dark greenness of pairs of outstanding leaves below. This tip is built up of pairs of erect, finely tapering white leaves, the outer pair, whose sides are slightly folded inwards on the midrib as hinge, enclosing a tall four-sided cone formed by pairs of leaves successively fitted one inside another like a Chinese nest of boxes. As the outermost pair develops, it opens and stretches horizontally, and then it can be seen that only the backs of the leaves are white; the face, first palest green, soon darkens on exposure to the light into the deep natural shade. The contrast between back and front is remarkable, and as the wind sways them they flash, now dark now light, in obedience to it. And these characteristics are common to other *Buddleias*.

The little orange balls are built up of about a hundred flowers, all their mouths outermost, so that the surface of the ball is apparently cut up into about a hundred little areas. The calyx is hairy, the orange corolla is a wide tube topped with four lobes. Within, it is very hairy; on the inside of the tube are set four small stamens, and in the centre is the seed-case with its column.

Beautiful Flowering Shrubs

Of course the individual flowers of the beautiful spikes of *B. variabilis* are upon precisely this same pattern, the colouring only differing, for there, while the petal-tube is yellow the petal lobes are purple and the stamens are greenish. And though in the one case flowers are grouped into little balls and in the other into very long spikes, yet the spikes are really made up of little clusters of flowers set each upon a single, short stalk along the main axis. In the autumn, as November days are passing, the purple flower spikes are replaced by great masses of little reddish fruits—tiny ruddy sausages.

The family of the Buddleia is the *Loganiaceæ*, a family unrepresented in the British flora. The poisonous *Nux Vomica* belongs to it.

There are two varieties of *B. variabilis*, namely "*veitchiana*" (placed among "novelties" in 1903 and extensively planted since) and "*magnifica*"; both are perfectly hardy, as befits a plant that is found on the Chinese mountains 6,000 feet up. In both the colouring is richer and deeper than in the type "*variabilis*," and they are stronger growers. Their spikes are often two feet long, "*magnifica*" flowering a little later than "*veitchiana*," and it is claimed that these new Buddleias are the finest summer and autumn flowering shrubs that have been introduced here for many years.

There are several other Buddleias known in England,

BUDDLEIA

Buddleia variabilis



The Buddleias

such as *B. Colvillei*, which Sir Joseph Hooker characterised as the handsomest of all Himalayan shrubs, with deep rose bell-shaped flowers, arranged in terminal spikes half a foot long; *B. lindleyana*, a very tender shrub which Fortune found in 1843 in the Chinese island of Chusan, and described as having "a most graceful appearance as its long spikes of purple flowers hung in profusion from the hedges on the hill sides"; *B. nivea*, only sent from China in 1905, whose foliage is even more striking than its tails of rose-purple flowers, for every leaf on the under side, every bud, and even the young wood, is covered with a dense white felting; and the newer *B. officinalis*, which Mr. E. H. Wilson recently found in the Yang-tse Valley when collecting for Prof. Sargent of the Arnold Arboretum, U.S.A., where the mauve-purple flowers have a pale blue centre instead of an orange-coloured one. But these new varieties are so far really no improvement on the older ones for, as Mrs. Earle justly says, *B. globosa* "has many merits besides its golden balls which so charmed Mr. Bright. . . . The growth is lovely and the tone of the green unusual, mixing well with many summer flowers. It lasts a long time in water in the hottest weather. The more you cut it the better it seems to do. It was killed to the ground in the cold winter of '94-'95, but broke up from the roots as strong as ever. Some plants do this, others never recover."

Beautiful Flowering Shrubs

While as for its new rival, the sumptuous *B. variabilis* and its varieties, it is difficult to conceive what better the heart of the most enthusiastic gardener could desire, for it is the sum, the climax of beauty in garden shrubs.

Soil and Cultivation.—A rich loam and plenty of sunshine are the Buddleias' chief requirements. They may be grown in sandy soil from seed or from cuttings with a heel of old wood taken in autumn. *B. variabilis* requires well pruning in the early spring.

XXIV

THE BRIER ROSES

Rosa rubiginosa Sweet Brier, Eglantine
And the hybrids known as "Penzance Briers"

THE Rose as a shrub has demanded not a chapter, nor a book, but a whole literature to describe it, for is it not the King of the Flowers, with infinite possibilities and unnumbered charms?

"If Zeus chose us a king of the flowers in his mirth,
He would call to the Rose and would royally crown it ;
For the Rose, oh the Rose ! is the grace of the earth,
Is the light of the plants that are growing upon it."

Therefore, in a mere gallery of beautiful shrubs, it is not even remotely possible to do it justice, and all that remains is to take some one representative which may suggest faintly the delights of the whole genus.

The flower of our picture is one of the Penzance Briers, and whether or no these Roses can claim the palm for beauty, at least they can make a just claim to be representative, for they are the cultivated children of our own native Sweet Brier, the poets' Eglantine, the plant which has ever stood as the quintessence of delight, the summit of charm, in our English flora. Chaucer well knew the "So sweet an air of the

Beautiful Flowering Shrubs

Eglantere"; Spenser echoed, "Sweet is the Eglantine"; while Dryden used the strongest possible simile to express his sense of its sweetness—

"The fresh eglantine exhalet a breath,
Whose odours were of power to save from death."

"Not even among the roses," says Dean Hole, "shall we find a more delicious perfume. The thurifer wears a sombre cassock, but no sweeter incense rises heavenwards." While as for its beauty—"What can the world produce equal to the June rose? The common brier, the commonest of all, offers a flower which, whether in itself, or the moment of its appearance at the juncture of all sweet summer things, or its history and associations, is not to be approached by anything a millionaire could purchase."*

Late in the 'eighties, when the cult of the Rose was greatly to the fore, it was borne in on Lord Penzance, a great lover and grower of roses, that many of the new varieties, beautiful and wonderful though they often were, were wanting in certain attributes of a perfect Rose, and in particular they frequently lacked the grace of scent—a very serious lack—since, admittedly, fragrance is "the very soul of the Rose."

"The rose looks fair, but fairer we it deem
For that sweet odour which doth in it live."

(Shakespeare.)

The new Roses, too, were often very short lived, and

* Richard Jefferies.

The Brier Roses

particularly susceptible to mildew. So he gave the whole matter his earnest attention, and "having ascertained beyond a doubt that the various races or families of the Rose are capable of combining by cross-fertilisation, the road seemed to be open to adventure in search of a new race which might be free from some of the existing defects." And eventually he became convinced that "the Sweet Brier offered itself as a very natural basis of a new race." It was a native, and our soil and climate were its true home; it was proof against mildew, frost would not hurt it, while it was more richly endowed with fragrance—fragrance of leaf as well as flower—than was any other Rose.

"The breeze of spring, the summer's western wind
Robs of its odour none so sweet a flower
In all the blooming waste it leaves behind
As that the Sweet Brier yields it.

Its sweetness all is of my native land,
And e'en its fragrant leaf has not its mate
Among the perfumes which the rich and great
Buy from the odour of the spicy East."

(*G. F. Francis.*)

So he commenced hybridisation with the Sweet Brier as one parent, and various Tea, China, Hybrid, Perpetual and other garden Roses as the second, using for the most part the pollen from one of the last-named flowers to fertilise Sweet Brier blossoms. And he

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found, to his joy, that the Sweet Brier was a first-class seed bearer and more certain to bear fruit, when fertilised with pollen of other Roses, than any other Rose or class of Rose, that in his experience had presented itself.

The result of his labours was the origination of a wholly new and most beautiful series of Roses, now known as the "Penzance Briers." They are much larger and stronger than their famous parent, and their foliage is on bolder lines. But the old fragrance is still there in its fullness.

" And scent in every leaf is mine,
And the scent—oh that's divine !
Happy-sweet and pungent-fine,
Pure as dew and pick'd as wine."

(Leigh Hunt.)

The flowers, too, while still "single" like the Wild Rose, are more freely borne, and being larger cause the shrub to be one mass of colour—colour that is of all possible shades, according to the variety. Lord Penzance called the varieties for the most part after Scott's heroines. So there are deep-rose blossoms in "Amy Robsart," pale-rose in "Edith Bellenden," white in "Flora McIvor," rich crimson in "Meg Merrilees," and the softest pink in "Julia Mannering," while "Lucy Bertram" has white flowers edged with dark purple, and "Jeanie Deans" rises to scarlet, semi-double blooms. Perhaps the most beautiful of all, however, is "Lady Penzance," with very distinct, extra fine, coppery-yellow

PENZANCE BRIER

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The Brier Roses

flowers, a hybrid obtained by using the striking copper-hued form of the Austrian Brier, *R. lutea*, as the pollen parent. Lord Penzance is commemorated in a fawn-coloured rose with a yellow centre. Altogether there are fifteen or sixteen of these "Penzance Briers."

The structure of a Brier flower is interesting. The end of the flower stalk is thickened, and forms a deep cup with thick margin, on which are set five long-pointed and rather peculiar sepals, which are a very noticeable feature of the blossom, and which gave rise to an old Latin riddle, attributed to the monks. According to one English version it runs:—

"Of us five brothers at the same time born,
Two from our birthday ever beards have worn,
On other two none ever have appeared,
While the fifth brother wears but half a beard."

For two of the five are simple triangles in outline, two have little spurs or appendages on either side, and one has but one spur on one side. The petals are very large and fragile, and stand alternating with the sepals. There is a ring of many bright yellow stamens, and all these three rings—sepals, petals and stamens—are on the margin of the receptacle cup. The cup itself is partly covered by a green "lid," on which is spread honey; honey is very rare in Roses, strangely enough. In the centre is an orifice out of which emerges a cluster of columns, each of which stands on a seed-case lying at the bottom of

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the cup embedded in white hairs. They are quite ready for fertilisation when the bud opens, but the stamens surrounding have not yet matured their pollen, and are in any case leaning well away from the centre of the flower. Now is the best chance for cross-fertilisation, which is usually effected by some honey-bee lured by the fragrance, honey and colour. Later the stamens mature and gradually rise and bend right over towards the middle of the flower. During these hours the visiting bees carry away pollen with them, and also these stamens necessarily drop their pollen on to the stigmas of their own flowers, and so fertilise them if they are not already fertilised.

Lord Penzance's researches seemed to show that when the Sweet Brier blossom was fertilised with the pollen of other Roses, the hybrid seedling retained all the leaf fragrance of the Sweet Brier, and this was rarely, if ever, the case if Sweet Brier pollen were used to fertilise the blossom of another Rose.

The flowering season of the Penzance Briers is greatly extended beyond that of the ordinary Sweet Brier, indeed odd blossoms may be found up to the very end of the autumn. The brilliancy, too, does not cease with the full flowering, for a crop of large scarlet hips follows upon the fading of the blossoms.

As a hedge the ordinary Sweet Brier has always been welcomed in our gardens. Was not the Sleeping

The Brier Roses

Beauty guarded by a prickly Sweet Brier hedge? Chaucer talks of hedges of "Sicamour and Eglatere." So the Penzance Brier hedge is, therefore, doubly acceptable—finer, more vigorous, more brilliant, and even more fragrant. It is the ideal fencing to ring a Rose garden—light, airy and many-hued; and in early May days when the air is moist and the sun warm, a perfect wave of fragrance bathes one as one passes, a fragrance all the more grateful because the roses within the garden have not yet put out their scented blooms. In parenthesis one may remark that the Briers are always more lavish of their scent under the influence of moisture. Keats sang of "dew-sweet Eglantine," and how

"rain-scented Eglantine

Gave temperate sweets to that well-wooing sun."

What better hedge, too, than its tall arching sprays could be found for "The Sweet Garden" that Dean Hole speaks of, a little fenced-in garden filled exclusively with sweet-scented flowers—gillyflowers, honeysuckle, clove-pink, jasmine, verbena, rosemary and every fragrant plant that in succession by day, and even, as with the honeysuckle, specially by night, would fill the air with sweetness and make it a blind man's paradise? The essential oils which give rise to this odour are contained in myriads of reddish glandular hairs that edge the teeth of the leaf margins, and cover

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particularly thickly the green cup receptacle just below the blossom.

The Penzance Brier is exclusively a garden flower. Pick its blossoms and bring them indoors and they are mostly a disappointment, for they droop and fall. It is said that it is for this reason that they are no longer exhibited at flower shows. If, however, the buds be picked and placed in water they will then unfold and show their beauty.

The Austrian Brier—*Rosea lutea*—with its wonderful yellow-gold and copper colourings, has similarly been used as a basis for a new class of roses by hybridisation, and some very beautiful plants have resulted, but they lack the crowning grace of the Penzance Brier—the fragrant foliage.

Soil and Cultivation.—The Penzance Briers flourish in ordinary garden soil. They need sunshine and plenty of air. When first planted they should be well pruned back; afterwards, except for removing old wood, little pruning is necessary, and their long arching sprays should be largely left to Nature. Being hybrids they must be propagated by cuttings to ensure the true form.

XXV

CORONILLA AND COLUTEA

THE "BASTARD SENNAS"

<i>Coronilla emerus</i>	The Scorpion Senna
„ <i>juncea</i>	The Rush Coronilla
<i>Colutea arborescens</i>	The Bladder Senna
„ <i>cruenta</i> , or <i>C. sanguinea</i> , or <i>C. orientalis</i>	The Oriental or Bloody Senna

D AINTY shrubs with pale-yellow flowers of the pea type, and airy, delicate foliage—these two “Bastard Sennas,” as they were called of old, are graceful additions to any garden. Belonging to the family *Leguminosæ*, the fruit of both is naturally a pod, but so different in character that, mainly on this point, botanists place them in different genera, and their common names are founded on the distinction. In *Coronilla*, the “Scorpion Senna,” the pods are long, slender and peculiarly twisted—“little long crooked cods . . . whereof it took his name,” wrote Gerard in the sixteenth century—which, when ripe, divide into oblong joints, each containing a single seed. In *Colutea*, the Bladder Senna, the wall of the pod inflates to form a peculiar parchment-like bladder, from the top seam of which hang the tiny flattened seeds. Very

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alluring bladders they are too, very challenging to an observer to press and "pop" them, as one "pops" a blown-out paper bag, with an explosive crack, a crack that is the sharper the riper the pod. Even the Elizabethans, so we learn from Gerard, played this "popping" trick upon the plant. Of course, the plant did not design them for this game, but for a deep utilitarian purpose, namely, that when ripe and they become detached from the branches, they shall be lightly hustled before the wind in all directions, and thus their now rattling burden of loose seeds carried far and wide.

The airy foliage, more fragile and on a smaller scale in *Coronilla* than in *Colutea*, is composed of leaves which are broken up into a terminal leaflet and a number of pairs of lateral leaflets. At the base of each leaf-stalk, by the main stem, is a pair of minute leaf-structures known as stipules. In *Coronilla*, too, the branches themselves are yielding and graceful, while in the *Colutea* they are much more rigid and stiff.

When one turns to the flowers one finds various points of interest. In *Coronilla* they are in groups of threes at the tip of the branches, crowning them with colour as it were; hence the generic name *Coronilla*—a little crown. The calyx of each is a small green cup with five sharp points. Out of it on long thin limbs project the petals, the top big petal—the standard—being set a little more apart from the rest of the flower

SCORPION SENNA

Coronilla emerus

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Coronilla and Colutea

than in the pea, for instance. In the bud this wraps round the rest of the petals, and at an early stage of its development it is red; hence the buds all appear to be bright red. Mingling with the yellow fully-opened flowers they add a pretty note of colour to the shrub. As the flower opens, and the standard ages, it loses its red hue, and is yellow like the rest of the petals. The two side petals—the wings—are closely folded to the pointed keel (which is composed of the remaining two petals), and arch, saddle-wise, over it. Within the keel are the ten stamens, the lower halves of nine being joined to form a deep narrow trough, while one remains out of the brotherhood, i.e. in botanical parlance they are “diadelphous.” The filaments in their upper part, just below the anthers, are thickened into clubs. Inside this trough lies the long, thin, immature pod with a projecting horn at top among the ten distinct heads of the stamens. Therefore, we have the keel enwrapping the whole of the stamens, and the filaments of the stamens enwrapping the seed-pod.

The mechanism of the flower is this. A bee hovers and then straddles on the saddle of the wings, and its weight presses on the keel beneath. Since the stamen heads shed moist pollen into the hollow peak of the keel as the bud opens, this action forces the stamen filaments upwards, their club ends pressing on the shed pollen, and out through the minute hole at the tip of the keel it

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comes like a little worm—just as one squeezes a “worm” of cream out of a chemist’s collapsible tube. With a hand-glass one can watch the whole process beautifully, if a pencil or finger play the part of the bee. Again, just as one can squeeze the collapsible tube time after time, getting out fresh cream with each pressure, so bee after bee alights on and can press the keel again and again, causing successive fresh exudations which smear each visitor’s abdomen and legs. But ultimately—the keel becoming less and less resistant every time—there comes an occasion when it is pressed down so far that the horn of the seed-case is thrust after the pollen through the keel point, and as it rubs on the insect’s body it becomes smeared with the pollen which is resting there, and which was probably brought from other flowers. Finally the petals fall, and a quaint twisted pod quickly develops from every fertilised blossom.

In the Bladder Senna, *Colutea arborescens*, the flowers are set five or six together in clusters; the petals are more compact, the big standard is often bent right back on itself; the wings clasp the keel as in *Coronilla*. Here, when the insect straddles them, there is no vermiform emergence, but a mass of loose pollen is pressed out through the keel by the top of the hook-like projection from the pod. This pollen can be seen resting on the top of the hook, but it is not fertilising the ovules in the pod, for the receptive part is the *under* side of the hook,

Coronilla and Colutea

and is fertilised from the pollen on the abdomen of the visiting insect. When the petals wither and fall the tiny green pods hang, and at first sight appear as though they would be of the familiar type, but very quickly they inflate and their wall becomes thinner, drier, tinged with red, and in a state of tension, and altogether they form a remarkable sight. Hence a Colutea may be said to have two periods of attractiveness in the season—in June, when the golden flowers make it gay, and in August, when the peculiar bladder fruits make it notable; indeed, it is as often planted for the sake of the second as for the first. Many a traveller entering London by the Midland Railway in late summer has had his curiosity aroused by the bladder-hung shrubs that dot the embankment right up to the very borders of the great city. For—and herein is still another asset of this plant—the Bladder Senna will thrive where other shrubs would starve; dry poor soil comes not amiss to it; even up to the very edge of the crater of Mount Vesuvius it finds a foothold. Coronilla, too, likes a dry soil, but it has not quite the ascetic hardness of its relative. Both are natives of central and southern Europe. It is difficult to say when they were first brought to England. Gerard, in 1596, speaks of both as growing in his garden.

Another Coronilla shrub, *C. juncea*, is sometimes grown as a curiosity. It has rush-like branches (*juncus*—a rush), almost destitute of leaves, and yellow flowers

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at the end of the branches. It was brought to this country from the south of France in 1756, and asks for sun and shelter.

There are also several other Coluteas that are known here, but the only one at all generally found in our gardens is the Oriental or Bloody Senna, *C. cruenta*, or *C. sanguinea*, or *C. orientalis*. It gains the two former names from the fact that its flowers are a peculiar yellowish-red, the same hue also tinging the bladders. It is not quite so large a shrub as the Bladder Senna, and its foliage is rather paler and smoother, but it is a more vivid shrub altogether. It came to us from the East in the early part of the eighteenth century.

Soil and Cultivation.—*Coronilla* requires moderately good soil and plenty of sunshine. *Colutea* is not so particular, and will thrive in very indifferent soil and without a great deal of sun. Both may be propagated by seed, *Colutea* preferably so, or by cuttings grown in a cold frame. *Colutea* should be cut well back every winter.

XXVI

THE COTONEASTERS

<i>Cotoneaster buxifolia</i>		Box-leaved Cotoneaster
„ <i>frigida</i>		
„ <i>horizontalis</i>		
„ <i>microphylla</i>		
„ <i>pannosa</i>		
„ <i>rotundifolia</i>		
„ <i>rugosa Henryi</i>		
„ <i>interrigima</i> , or <i>vulgaris</i>		

THE Cotoneasters' chief claim to a place in any garden rests largely on the note of gaiety that their thick clusters of brilliant fruits give in the drab days of winter. Rich crimson, orange-red, or brightest scarlet, the little round berries are often massed so closely together that the whole branches are studded with them as with jewels. They vary in size—those of *C. rotundifolia* are the largest with a diameter of half an inch—and they vary in hue, but in our selected garden species they are always a vivid and grateful piece of colour. The flowers of the Cotoneasters, on the other hand, know nothing of this vividness of colour. Invariably they are white or slightly suffused with a pale blush, and small. But massed in their clusters and gleaming in their paleness they show

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a certain brilliancy and considerable prettiness under the bright May and June sun, though doubtless the fact that they compete for notice at the very height of the spring's output of beauty is the real reason that they are not more appreciated. Dr. Lindley, the botanist, waxed very warm in his appreciation of these "snow-white flowers which, reposing on a rich couch of green, have so brilliant an appearance that a poet would compare them to diamonds lying on a bed of emeralds." They are of the familiar rose type—the *Cotoneasters* belong to that peerless family the *Rosaceæ*—and hence are related to the hawthorn, cherry laurel, apple, pear, rowan, cherry, quince and other of our most charming flowering trees and shrubs. Indeed, the very name *Cotoneaster* signifies quince-like, *Cotoneum* being "a quince tree" and *aster*—*ad instar*—similar, though the tiny white flowers are, at first sight, very unlike the large, beautiful flowers of the quince. The name seems traceable to Conrad Gesner, "a Germane physitian," "a very learned, painfull, honest, and juditious writer" (according to Gerard), who, under it, describes what was later called "Gesner's wilde Quince" in a book on plants published in Venice in 1541.

Each flower has five sepals, five petals and many stamens; the end of the flower stalk is cup-like, the petals and stamens being on the edge of this cup, and the fruits set partly within it, partly projecting. Out

The Cotoneasters

of the inner wall of this receptacle honey oozes, but it is almost concealed by the stamens nearly closing the mouth of the cup. Flies, beetles and wasps seem the insects that most favour these shrubs by their visits. When fertilisation has been effected the wall of the cup swells up and forms the outer part of the bright berry, and the real fruits within turn stony.

Again, the Cotoneasters are desirable shrubs because of their foliage—foliage not handsome but serviceable. The leaves are usually small; in many species they are evergreen, in others they tend to the evergreen habit if the climatic conditions are not severe, in some they are deciduous. Indeed, they are a great feature in distinguishing the different species, as, for instance, *C. buxifolia*, the Cotoneaster with leaves like those of the box; *C. microphylla* and *C. rotundifolia*, the small-leaved and the round-leaved Cotoneasters respectively, and so on.

Our only native Cotoneaster, *C. interrigma*, or *C. vulgaris*, which grows wild on the Great Orme's Head, North Wales, and apparently nowhere else, is not attractive for garden use. The garden species are all Asiatic shrubs, chiefly from the Himalayas and north China. One of the best of these is *C. rotundifolia*, where the fruits are very plentiful, large, and richly coloured. For some reason or other they are often left alone by the birds, who are so partial to some of the

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berries in the genus. The rounded, shining leaves are in two rows and, though deciduous, often hang on over the winter into March days.

Another excellent species is *C. frigida*, which, like *C. rotundifolia*, comes from the Himalayan regions. It bears with great lavishness flat clusters of milk-white flowers, which later are succeeded by brilliant clumps of scarlet fruit. The leaves are very large for a Cotoneaster, and may be as much as five inches long, narrow and dull green. The seed was first received into England in 1824 by the Directors of the East India Company, from Dr. Wallich, a collector who did much to make known the mountain flora of the northern region of Nepal. This shrub is very hardy, obtaining its name from the cold of its native climes, and forms almost a tree if left free to grow. For a town garden it is invaluable—one of the best—delicately gay in summer, brilliant in winter, and shedding the dust and soot of a town every autumn with its leaves.

Most distinctive of all Cotoneasters is *C. horizontalis*, a low-lying shrub, whose branches grow with such precision in pairs at right angles from the main stem that, looking down upon the quaint outline, one is irresistibly reminded of a fish's backbone. The leaves are small and form a close-fitting vesture for the branches, and the flower-buds are rosy ; so that from spring when they stud the dark green branches, through summer

COTONEASTER
Cotoneaster buxifolia

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The Cotoneasters

when they change into white blossom, on to autumn when they make a final transformation into tiny crimson berries, this Cotoneaster is always a pleasure to the eye. If placed against a wall it will grow up by it, keeping its characteristic branching.

The Cotoneasters *microphylla* and *buxifolia*—others sent here by Dr. Wallich from the mountains of Nepal about 1824—are possibly the same species, since *buxifolia* is really *microphylla* on a larger scale. The leaves are oval, not more than an inch long in the former, and half that size in the latter.

Finally, among the many others that press for notice must be mentioned two newer species. The first is the Chinese Cotoneaster, *C. pannosa*, which was found by the Abbé Delavay on the mountains of Yunan, China, at a height of nine thousand feet. He sent the seeds to Paris in 1888, and four years later a plant of it was sent across to Kew. It is far less rigid than most of its relatives, its branches being slight and graceful with a peculiar woolliness about them.

The other is *C. Henryi*, only brought to England from Central China in the first year of this century by Mr. Wilson, who has done so much to make known to us the beautiful Chinese shrubs. It has the usual white clusters of flowers, its two chief characteristics being particularly large leaves—the biggest known among Cotoneasters, evergreen, rough and woolly to the touch—

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and a graceful drooping habit. As both leaves and fruit turn crimson in the autumn, it is particularly charming, and makes a most excellent shrub for a sunny wall.

Soil and Cultivation.—The Cotoneasters are easily contented and will thrive in quite poor soil so long as it is not too moist. They can be increased by seed, by layers, or by cuttings; grafting is not desirable, though formerly often practised. Pruning should be done in late summer.

XXVII

THE ROCK ROSES

or

CISTEN ROSES, HOLLY ROSES OR GUM CISTUSES

Cistus

<i>Cistus albidus</i>	.	.	.	White Rock Rose
„ <i>crispus</i>				
„ <i>cypricus</i>	.	.	.	Cypress Rock Rose
„ <i>florentinus</i>				
„ <i>ladaniferus</i>	.	.	.	Ladanum-bearing Rock Rose
„ <i>laurifolius</i>	.	.	.	Laurel-leaved „ „
„ <i>populifolius</i>	.	.	.	Poplar-leaved „ „
„ <i>purpureus</i>	.	.	.	Purple Rock Rose
„ <i>villosus</i>				

“**S**ISTUS that beareth that excellent gumme ladanum” is Peacham’s reference in 1634 to a Rock Rose, and in one of our earliest Herbals—Turner’s, published in 1551—we are told that “Ladanum hath the propertie to bind together, to warme, to make softe and to open the mouthes of the veynes.” And it is a fact that long before these very lovely shrubs were appreciated for their beauty they were celebrated for their “fat, clammy, transparent, and sweet-smelling gumme.” Even Lanfranc in 1400 refers to it; its reputation is not of one century nor of two.

Beautiful Flowering Shrubs

The Rock Roses, or Cisten Roses, or Holly Roses, or Gum Cistuses—all these names are popularly theirs—are shrubs of the Mediterranean regions, particularly abounding, perhaps, in Spain and Portugal; and in certain species, e.g. *C. ladaniferus*, a remarkable stickiness characterises their younger leaves and stems. They are, in fact, “limed” with resin, the “liming” being destined by the plant to trap all small creeping insects that might attempt to make their way to the upper and flowering regions of the shrub. But from ages immemorial this gummy secretion has been coveted by man as a healing balm, and in primitive ways he has collected it.

Johnson's Gerard, 1623, which describes no fewer than fourteen kinds of *Cistus*, recounts, in the words of Bellonius, the manner of the gathering: “The Greekes (saith he) for the gathering of Ladanum provide a peculiar instrument which, in their vulgar tongue, they terme Ergastiri. This is an instrument like to a rake without teeth; to this are fastened sundry thongs cut out of a raw and untanned hide; they gently rub these upon the Ladanum-bearing shrubs that so the liquid moisture concrete about the leaves may stick to them, which afterward with knives they shave off these thongs in the heat of the day. Wherefore the labour of gathering Ladanum is exceeding great, yea intolerable, seeing they must of necessity stay in the mountains all the day long in the greatest heat of the Dog-daies; neither usually shall you

The Rock Roses

finde any other who will take the paines to gather it besides the Greeke Monkes."

An old tradition existed that ladanum was gathered from the beards of goats, but Gerard dismisses the legend contemptuously as "an old fable of the lying monks themselves, who of very mockery have foisted that fable among others extant in their workes." Still there is no inherent improbability of the goats' beards serving the purpose of the aforesaid rakes, as the animals browsed upon the hills of Greece and Asia Minor, those "hills green with flowering shrubs, and in particular with labdanum." (Labdanum is a corruption, often found, of ladanum).

As a spice ladanum had its recognised place. Herrick (1618) in one of his poems says,

"How can I chuse but kiss her whence do's come
The storax, spikenard, myrrhe and ladanum?"

and Browning refers to "sandal buds and stripes of labdanum" in "Paracelsus." Thompson's Herbal of a century ago describes two kinds of ladanum: the best, very rare, appeared as soft, almost black masses, which became softer on handling, with a very pleasant smell and bitterish pungent taste; the inferior quality contained a large admixture of sand, had much less smell and taste, and was in long, hard, coiled rolls. It also figures there as chief ingredient in "a very elegant stomach plaster," by means of which "consumption from colds

Beautiful Flowering Shrubs

in delicate habits is frequently obviated"; but to-day its merits are overlooked and its claims consigned to oblivion.

The Rock Roses do not rank among the very hardiest shrubs, but still there is no need, as is so often done, to credit them with great delicacy. The Laurel-leaved Rock Rose (*C. laurifolius*) has survived 32 degrees of frost at Kew, and *C. ladaniferus* will live through 20 degrees of frost; *C. cyprinus* is even hardier. Of late years there has seemed a tendency to overlook them, which is a great pity, for there are few flowering shrubs to match them in beauty, and, given one of the warmest aspects in a garden, they will flourish very generally. For instance, the hardy *C. laurifolius* mentioned above, with leaves reminiscent of the laurel, makes a magnificent shrub. In May it is a mass of red buds, in June great flowers as large as a five-shilling piece, or larger, cover it thickly. The life of each blossom is short, it is true—only a few hours—but the multitude of on-coming buds, charming in their wrapping of crimson bracts, speaks of a great succession to make up for individual shortness of life. Each blossom is remarkably like that of a single rose—such a rose as is borne by a Penzance brier—but careful anatomical study will show that here all the parts of the flower are distinct and set separately upon the end of the flower stalk, while in the rose there are considerable adhesions, and

The Rock Roses

the stamens stand on the sepals. The Rock Roses are indeed classified in the small family *Cistaceæ*, and they have no representative in our native British flora, their nearest and only close relatives being our four little Rockcists (*Helianthemum*).

The flowers of this Laurel-leaved *Cistus* have three sepals, and five great white petals, fragile and fleeting. Then come close rings of some one hundred and eighty yellow stamens, their heads set firmly on the end of yellow filaments, each head darker in hue than its filament and containing red-yellow pollen. These anther heads open by slits lengthwise, and it is interesting to notice that these slits only open for the pollen to escape in fine dry weather; when the weather is bad they remain closed. A *Cistus* flower does not willingly waste any of its pollen, for this has a double function. It is, of course, primarily for the fertilisation of the ovules; but it is also produced in great quantity in these many stamens to serve as a bait for insects, for the *Cistus* offers no honey to lure them to it. Instead, pollen is offered as food, and bees and beetles eat it with avidity, and "it is no uncommon thing," as Kerner says, "to find in a single *Cistus* or Rock Rose flower half a dozen *Dasytes* (beetles) greedily devouring the pollen." The cup-like, overlapping petals store any that falls, and as the insects rummage about and pass from flower to flower they naturally cross-fertilise the blossoms.

Beautiful Flowering Shrubs

In the centre of the flower is a big globular seed-case, yellow, with downy rough surface; and set on a very short thick column is a flat knob with roughened surface. It is this surface that collects the pollen grains which, later, send down the finest of tubes through the thick column and pass their fertilising contents to the many ovules within the seed-case.

Eventually this seed-case develops into a big, hard, brown capsule, which has given the plants their generic name, for "Cistus" is derived from *Kiste*, signifying a box. The old name Cisten Rose has obviously the same derivation.

The interior of the capsule is divided into five compartments, down the middle of each of which a fine wall, or septum, runs. The last stage of development is reached about October, when the capsule splits into five portions and releases the little seeds.

This description of the flower in the Laurel-leaved Rock Rose serves also in all essentials for that of all the other species.

This shrub was introduced into this country in 1731, and as a flowering evergreen for a dry situation it is hard to beat; under the noonday heat of the June sun it is not only a refreshing joy in its contrast of gleaming white flowers upon a dark-green shining foliage, but it is also a joy in the faint incense-like aroma that it diffuses around.

ROCK ROSE
Cistus florentinus

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The Rock Roses

Cistus albidus is another desirable shrub of considerable hardiness, which has been cultivated since 1640. The whiteness referred to in its specific name is due to the felting of white tufted hairs that covers all the young green parts of the shrub—stems, leaves and sepals. (There are five of the latter in this particular species, not three as in the last.) The flowers are again large, as much as $2\frac{1}{2}$ inches in diameter; the petals a rich purplish-rose in hue, with a yellow blotch marking the base of each. As the blossoms are collected, some half-dozen together, into clusters at the ends of the branches the whole effect is distinctly gay.

Cistus crispus is very like the last-named species, but the leaves are narrow with very crimped margins. Again we have the felting of hairs and the rose-hued flowers, though the colour is a somewhat deeper red. It is a shrub of rather small size, two feet being its average height.

Cistus ladaniferus, the ladanum-bearing, or Gum Cistus, so called because its leaves feel somewhat clammy than most, is particularly handsome. Its solitary flowers measure three to four inches across, and no other hardy Cistus can boast of larger. The petals are white; in one variety, *C. maculatus*, very commonly met with, they are stained at the base with a blood-red blotch. The Rock Roses are famous at hybridising, and apparently all the beautiful spotted Rock Roses that enhance our

Beautiful Flowering Shrubs

gardens are ultimately traceable to this species as regards one parent. It was introduced into England in 1629.

The Cypress Rock Rose (*C. cyprius*) is one of these hybrids, with the Laurel-leaved Rock Rose as the second parent. "I consider it the most beautiful of all the *Cistus* we can grow out of doors," says Mr. Bean. The white petals show the characteristic red blotch, the stems are smooth, the sepals scaly as in *C. ladaniferus*, but the large flowers are clustered as in *C. laurifolius*, and the leaves are also reminiscent of that species.

Another hybrid, *C. purpureus*, also shows these spotted petals, but in this case the hue is a rich purple with a crimson blotch; it is claimed as the finest red *Cistus* in cultivation. The flowers are in threes, but only two are ever open together. The leaves vary from one to two inches in length, and are narrow, smooth above, hairy below. Its average height is about four feet, and it is usually a bush as broad as high. Its second parent is *Cistus villosus*, which has purplish-red flowers and very hoary leaves, and it is said to be the first Rock Rose that found its way into cultivation here, the date of its introduction going back as far as 1597. Its dense felted leaves are spatulate-shaped, with a short broad stalk. It is not so hardy as the other species already mentioned.

Cistus florentinus of our illustration is a natural hybrid found wild in southern Europe. It is a good-looking shrub, well known in our gardens. Its white

The Rock Roses

flowers have a big yellow blotch at the base of each petal.

Many other species and hybrids, desirable and handsome, might be enumerated ; but with a passing reference to the Poplar-leaved Cistus, *C. populifolius*, which has long-stalked, poplar-like leaves, unlike any others of the genus, and white-yellow, spotted flowers, their enumeration can be carried no farther here.

Soil and Cultivation.—A warm, *dry* situation and the sun are imperative to all Cistuses, and they prefer a light soil. In specially severe winters they may be preserved by covering them with bracken or leaves. They are usually propagated by cuttings (this is, of course, the only way in the case of hybrids) struck in mild heat. They will not bear transplanting after they have been once planted out.

XXVIII

THE DAISY BUSHES

Olearias

Olearia Haastii . . . The Daisy Tree

„ *chathamica*

„ *stellulata*

„ *macrodonta*

„ *insignis*

„ *nummularifolia*

„ *Forsteri*

ON the New Zealand uplands, where the forest ends and the meadow-land begins, there is not infrequently an almost impenetrable natural barrier dividing the two; particularly is this the case where the rainfall is very heavy. This natural fence, known to botanists as the sub-alpine scrub, is made up of shrubs of many kinds, whose dense, rigid branches intertwine and interlock to an amazing degree; and it is remarkable for being largely constituted of some of the most interesting and representative members of the New Zealand flora. Here are many veronicas and senecios, and here, too, is the home of the many "Daisy Bushes," whose gradual introduction to English gardens during the past half century has been one of the outstanding features of garden progress. Nowhere but

The Daisy Bushes

in the Antarctic continent of Australia, New Zealand and Chatham Island are the Daisy Bushes found ; they are purely a product of those regions, and show what the great and varied *Compositæ* family can arrive at if left on an untrammelled line of development.

To us in Great Britain *Olearia Haastii* is pre-eminently *the* Daisy Tree. It was introduced here in 1854 by the elder Veitch, of the well-known firm of J. Veitch and Sons, and is a big bushy shrub with crowded, evergreen, oval leaves, small and leathery and covered with white down beneath. It is very hardy, and asks for no trimming and little attention, and will grow well right down by the sea, in town gardens and in shady places. In August it is covered with daisy-like blooms,—hence the popular name—each bloom consisting of about five white rays with eight to ten little yellow tubular flowers at its centre. It was the profusion of these dainty star-like blooms that led Sir Joseph Hooker to suggest the pretty and appropriate name “Eurybia”—Mother of Stars—for it, and by this it was at first known. However, the name Eurybia now designates a different genus. The Olearias obtain their name from the fact that the first-known species had leaves with a grey-green colouring similar to that of the olives, botanically known as *Olea*. The second name of the Daisy Bush—*Haastii*—recalls to memory Sir Julius Haast, a well-known scientist who explored the New Zealand Alps

Beautiful Flowering Shrubs

about 1860, and cast great light on the alpine and sub-alpine flora of those then little-known regions.

But, favourite as is *the* Daisy Tree, and specially favoured because in August there are few other shrubs to be found in flower, it is by no means the most beautiful of the Olearias. Others surpass it in this respect. *Olearia stellulata* (often confused with *O. gunniana*), for instance, has larger, handsomer blooms, over an inch across, collected into loose clusters. Their rays are pure white, their disc yellow. The leaves are longer, too, and oval, with waved edges, and though green above are white-felted below. But the greater beauty carries the drawback of less hardiness, and the shrub will only grow in favoured gardens. Though *O. gunniana* is so like *O. stellulata*, its flower clusters are less fine, while its leaves are larger. The latter is the better shrub for a garden, as it is more compact and flowers more freely. The lack of real hardiness is also found in *Olearia macrodonta*, which can always be distinguished by its handsome, big, many-pointed leaves. It is very like a holly to look at, but with none of that plant's defiant prickliness. Its large flat clusters of white flowers with dark centres appear earlier in the summer than do the stars of *O. Haastii*. In *O. ilicifolia*, the New Zealand native holly, so like *O. macrodonta* in appearance, except that the leaves are much narrower, the leaf points are really

DAISY TREE
Olearia Haastii



The Daisy Bushes

stiffened, and it is further distinguished by its musk-like smell.

Far beyond *the* Daisy Tree in beauty are several species as yet little known in this country; the *Olearia insignis* is perhaps the chief of these. In its New Zealand home explorers tell us it grows among the driest of rocks, sea-side cliffs and high mountains, where plant nourishment would seem far to seek.

“Some adventitious flower
On savage crag-side grown,
Seems nourished hour by hour
From its wild self alone.”

— (W. Watson.)

And it was in such circumstances that Sir D. Munro discovered it about 1860. Its long broad leaves are thick and leathery, and when young are further covered with white down, which later disappears from the upper, though never from the under, surface. Its great white blooms, each held up on a stalk as thick as a pencil, are more like great white thistles than anything else in an early stage; later they are often three inches across, and, with their white rays and yellow centres, make the plant a remarkable sight in the flowering season. Since it grows from sea-level up to an altitude of 4,000 feet in the South Island, and in such dry bare positions, it would seem that it should be quite hardy in this country.

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Again, *Olearia chathamica* suggests itself as a most desirable shrub that the near future will find in our gardens; though only introduced here in 1908 by Captain A. Dorrien Smith, it has already shown that it can stand 18 degrees of frost unimpaired. Its aster-like blooms, the size of those of *O. insignis*, have pale lavender rays and purple centres, and its leaves, four to six inches long and two inches broad, have saw-like margins to their leathery blades.

Soil and Cultivation.—The *Olearias* do not like lime in the soil, and should be planted in light loam with a little peat. *O. Haastii* will thrive in most places. The beautiful *O. chathamica* is reported also as hardier than *O. macrodonta* and *O. stellulata*, but is yet too new to have been really tested.

After flowering the little brown feather heads of seeds, which persist through the winter, give these shrubs rather an untidy appearance, but they can easily be snipped off. The *Olearias* should be pruned, but only if actual necessity arises, in the early spring. They are propagated by cuttings of ripened wood taken about the end of September or in October and placed in cold frames.

XXIX

THE SPIRÆAS

WHITE FLOWERS :

S. arguta (hybrid), *S. Thunbergi* × *S.*
multiflora

S. aræfolia, or *S. discolor* . Spray Bush

S. prunifolia

S. Henryi

S. lindleyana

PINK AND RED FLOWERS :

S. japonica Rosy Bush Meadow Sweet

var. Anthony Waterer

bumalda

splendens, and others

S. Douglasi

S. salicifolia

S. nobliana

S. tomentosa The Hardhack, or Steeple Bush

NO shrubs are more graceful, none more delicately enchanting, than the Spiræas; and they are doubly desirable in that, for the most part, they grace the garden when the majority of flowering shrubs have had their day. Relatives of the meadow sweet—that “queen of the meadows” which in July and August days waves its tall plumes by stream or ditch-side—they come crowding from all parts of the Northern hemisphere to add charm to our gardens: from California and Japan,

Beautiful Flowering Shrubs

from the Himalayas and the Tyrol, from China and Russia. East and West alike furnish us with them, while at home the gardeners have added their quota of variation in mingling the various species into endless attractive hybrids. But, indeed, if the truth must out, we are now confronted with too many *Spiræas*, with a plethora of choice that is overwhelming. "The fact is," says Mr. W. Robinson, in his "English Flower Garden," "we have now too great a number of *Spiræas* and too great a similarity among them, and flowering much about the same time. . . . No collection of *Spiræas* need number more than a dozen kinds to represent the finest types of beauty of flower and growth." For ordinary gardens even this number is lavish ; so long as one secures a succession of these shrubs in spring and summer, why trouble to grow any but the best? And, perhaps, for general purposes these are :

1. *Spiræa arguta*, a hybrid with the Japanese *Spiræa Thunbergi* for one parent and *S. multiflora* as the other. It takes after the first-named parent in coming into flower in the very early spring, for before the winter nip is out of the air its slender arching branches are so covered with clusters of tiny white blossoms that it seems as though the whole shrub were left laden with a keepsake from those snows which so lately passed over its head. All the *Spiræas* are characterised by the massing together of many tiny flowers ; their whole effect lies in the concen-

The Spiræas

tration of myriads of blossoms. But each flower, small though it is, is of the daintiest type—the type of the rose, for the *Spiræa* is of the Rose family; the flower-stalk ends in a cup, embraced by five tiny sepals whose tips project beyond the margin. Five fragile white petals, each distinct from its neighbours, stand on the outside of the cup's brim, and so does a ring of stamens next within them. The brim curves inwards, and on the inner edge is a ring of yellow honey tissue half concealed. At the bottom of the cup, like eggs in a nest, lie five rounded bodies—five seed-cases—each containing twenty or more seeds, and each surmounted by a white column. A hawthorn-like smell lingers round the blossom and attracts chiefly flies and ants, though many insects find their way to the *Spiræas*; and since the seed-case columns are ready to receive fertilisation before their own stamens open, there is necessarily a considerable chance of cross-fertilisation being brought about.

The flowers fall with May, and the shrub sinks into the general greenness of the garden, to stand out vividly again in the chilliness of autumn; for then the little single leaves change their vivid green for a brilliant crimson hue, and for a second time add a note of gaiety to the garden. This characteristic is specially noticeable in the parent, *S. Thunbergi*. It is also a great feature in another desirable *Spiræa*, viz. :—

2. *Spiræa prunifolia*, where, the leaves being larger

Beautiful Flowering Shrubs

than in the last species, this autumn colour change is most ornamental and a noticeable gain to the garden, and, in fact, would justify the shrub being planted for that alone, even were the flowering not the pretty sight it is. It also produces its rosettes of white flowers very early in the spring, only just second, indeed, to the *S. arguta* and *S. Thunbergi*. The double-flowered form of this shrub, *S. p. flore pleno*, is the one usually seen, and this form in its native country of China is commonly planted on graves. It was first sent to England from northern China by Robert Fortune in 1845, and proved to be a fine hardy shrub, where the floral "doubling" was particularly regular and perfect.

3. *Spiræa Henryi*, though not as yet often seen, since it is a new species introduced only in 1900, is, however, difficult to rival for beauty, and apparently quite easy to grow. Its name recalls that Imperial Maritime officer in China, Augustine Henry, who was one of the first to give the outside world an inkling of the great richness of the flora of Central and Western China—collecting over three thousand species—and who is thus worthily commemorated. On the borderland of China and Tibet this shrub is one of the commonest seen, its "yard-long flat sprays of pure white" decking the country far and wide. Its leaves of simple outline are among those that are used to make "tea," for in that land of tea it by no means follows that the genuine tea plant is a necessary

The Spiræas

antecedent to the beverage. This species flowers in June.

4. In the beautiful *Spiræa ariaefolia* (or *S. discolor*), we turn from the Spiræas of the East to those of the West, for this is the "Spray Bush" of North America, and a veritable joy to behold. Half as tall again as a man, it towers on high like a foamy cascade of down-hanging, delicate creamy clusters of hazy-looking blossom—flowers like a myriad stars—often two thousand of them set in a cluster a foot long. Infinitely light and graceful are these complex clusters with their branches and branchlets and their translucent petals. The innumerable red-anthered stamens on long white filaments stretch beyond the confines of the petals, giving a misty veiling to the whole. The stems are pale brown and smooth, the foliage a bright green as it faces one on a still day, each leaf a triangle, broad at the base, tapering towards, but not pointed at, the tip, the margin cut into rounded teeth, so large as to be almost lobes. But let the breeze rustle through, and the reason of its alternative specific name—*discolor*—becomes apparent, for the leaves have a silver sheen on their back, and as they move in the wind a ripple of silver runs over the bush. Never should this plant be omitted from a garden ; it is hardy, and asks for little attention. Alone, or grouped with others of its sort, it is a striking feature in those July and early August days when flowering shrubs are scarce.

Beautiful Flowering Shrubs

A little touch of history is bound up with it. It originally came to England in the form of seed about 1827, and was sent here from North America by David Douglas, the then collector for the Royal Horticultural Society, who found masses of it forming part of the undergrowth of the forests on the North Pacific coast. It was on this very journey, while crossing from Fort Vancouver, through the Rocky Mountains, to Hudson's Bay, that Douglas met Sir John Franklin returning from the second overland Arctic expedition.

5. But challenging the beauty of the "Spray Bush" is another *Spiræa*—*S. lindleyana*—the "Plume Meadow Sweet," the last of the *Spiræas* to flower in the year—August is its best month—and perhaps the largest and most beautiful of them all. Its flowers are also small and also gathered into clusters, but they are not quite so small, and the branches of the clusters are not quite so closely set together, as in the previous species, and the white-flowering plumes rather suggest star-studded sprays than massed clusters. Even when the blossoms wither and little pale brown seeds take their place, the feathery plumes make an attractive addition to the handsome foliage. The leaves are cut up into a terminal leaflet and six or eight pairs of leaflets, each leaflet narrow, tapering, sharply pointed, and with edges nicked. Indeed, the whole shrub has a particularly airy appearance.

SPIRAEA
Spiræa Douglasi



The Spiræas

6. Before passing from the Spiræas with white or creamy flowers, one may perhaps just mention the garden hybrid *S. Van. Houttei*, which in May and June carries cushions of pure white blossom of great beauty.

7. Of those Spiræas with pink and red flowers, undoubtedly *S. japonica*, the "Rosy Bush Meadow Sweet," holds premier place, particularly in the form of its variety *S. j. Anthony Waterer*, where the flat clusters of flowers are a brilliant rose colour, and are to be seen decking many a garden in June and July. Another variety, *S. j. bumalda*, has also deep pink flowers, but is of dwarfer habit; while a third variety, *S. j. splendens*, has pale peach-coloured blossoms, and there are still other varieties. This shrub under various names, e.g. *S. callosa* and *S. Fortunei* has been known since the eighteenth century.

8. Then *Spiræa Douglassi*, with its rich pink flower-spires of daintiest miniature blossoms, surmounting erect shoots five or six feet high, is a truly delightful shrub that, like *S. lindleyana*, decks the garden in July and August. It is a North American plant, and its name once more recalls David Douglas, whose exploits have already been referred to, and who is supposed to have introduced more plants into our gardens than any other collector whatever. Curiously enough this *Spiræa* has often had as a synonym the name of *S. Menziesii*, which is reminiscent of the botanical explorer,

Beautiful Flowering Shrubs

Dr. Archibald Menzies, to whom reference has already been made in the account of the flowering currant. This shrub is hardy in all parts of England, and is one that should be introduced into every possible garden. An oasis of beauty in midsummer days can be made by planting a round bed in the centre of a lawn with *S. lindleyana* and *S. Douglasi*. There on the vivid green background, the feathery delicacy of the creamy-white plumes and the rose-pink spires, associated as they are with graceful and light foliage, give an indescribable touch of airiness and daintiness that is particularly grateful under the hot sun of July and August.

There are other pink *Spiræas*: *S. salicifolia*, now naturalised in Britain; *S. nobliana*, very like *S. Douglasi*, only flowering a little earlier; and *S. tomentosa*, the Hardhack or Steeple Bush, both the last-named being North American, but the two already described hold premier place for beauty and hardiness. It will have been already obvious that the *Spiræa* genus bristles with synonyms, and has endless confusing varieties which make them difficult to select from a nurseryman's catalogue. But while there are doubtless very desirable members that are not here mentioned, yet at the selection here given no one can cavil.

Soil and Cultivation.—The *Spiræas* are all lovers of moist quarters—witness our native meadow sweet—

The Spiræas

and though one may often find them in dry situations, yet they only show what their best can be if they are humoured in this respect. Therefore they should be planted in moist, rich loam, and if possible near a stream or water of some sort. Those which flower early from the previous season's buds, e.g. *S. arguta*, must not be pruned, only thinned; those which flower on the shoots of the current season and late in the year are better for cutting in the early spring.

The Spiræas form suckers at the root, hence they can be easily propagated by division. Cuttings, too, may be taken in the autumn.

XXX

THE SHRUBBY VERONICAS

<i>Veronica angustifolia</i>	.	.	.	Narrow-leaved Veronica
" <i>anomala</i>				
" <i>buxifolia</i>	.	.	.	Box-leaved Veronica
" <i>cupressoides</i>	.	.	.	Cypress-like Veronica
" <i>salicifolia</i>	.	.	.	Willow-leaved Veronica
" <i>Traversii</i>	.	.	.	Travers's Veronica

THE Shrubby Veronicas, like the olearias, are New Zealand's gift to the Old World. Veronicas as herbs have an almost world-wide range, but the big shrubby Veronicas are the exclusive product—as natives—of that country. (There is only one exception—*V. elliptica*—which is found wild also in the Falkland Islands and South America, but may possibly have been introduced there.) Indeed, Veronicas as a class—herbs and shrubs together—form a large portion, and often a singularly beautiful portion, of the New Zealand flora, for the *Veronica* genus is far and away the largest of any found there; some two hundred species are comprised within its New Zealand limits.

The shrubby Veronicas are, for the most part, shrubs of the hills, and constitute a major part of that dense scrub that there fences the tree-bearing regions from the

The Shrubby Veronicas

high meadowland, scrub so dense and matted that it is impenetrable unless a path is hewn through it. As a rule the regions of this scrub are liable to torrential rains and long periods of drought, and the leathery, evergreen foliage of most of the Veronicas is the plant's response to the demands of its environment.

Although the world range of the shrubby Veronicas is very limited, their variation certainly is not, for there are between seventy and eighty different species of them found growing in New Zealand. A considerable number of these have been tentatively introduced into this country; at Kew, and particularly at Edinburgh, there are good collections of them, but the half-dozen mentioned at the head of this chapter are the only kinds that are at all well known here at present. Indeed, it is only during the past half century that these shrubs have begun to find a place in any ordinary garden, but now their popularity is growing to such an extent that in certain parts of this country—in the neighbourhood of London, for instance—the Veronica, as a shrub, is bidding fair to become as familiar as the common Laurel.

The particular species that is far and away prime favourite is Travers's Veronica, *V. Traversii*; indeed, in ninety-nine cases out of a hundred, this is the one seen. And it is unmistakable at the first glance, so characteristically prim is its foliage. All down the

Beautiful Flowering Shrubs

shoots the stalkless leaves, identical in shape and size, are arranged one close behind the other, in four neat lines. Really they are in pairs, each pair at right angles to the pair above and below it, but the mathematical exactitude of the spacing between, the mathematical regularity of shape and size, make the ground plan of a shoot a perfect cross with equal and equidistant arms.

This formality in the foliage is a striking feature of the genus as a whole. When a number of species are set side by side, as at Kew, it is the characteristic that impresses one most. For instance, in *V. buxifolia* there are the four lines of equal-sized leaves, only the leaves are much smaller ovals—say half an inch long—than those of the *V. Traversii*, which are more than double that size. In *V. angustifolia* the leaves are comparatively long—two to three inches—and very narrow indeed; in *V. anomala* they are smaller almost than those of *V. buxifolia*, but always they form these four formal tiers. In the Willow-leaved Veronica, however, they are more graceful and delicate, and their tendency to droop renders the stiffness of their arrangement less obvious. But in *V. cupressoides* we get a singular case of mimicry, for no one who saw it for the first time in foliage alone would dream for one moment that it was a Veronica, or indeed anything but a cypress, for the leaves have become small scales, closely

VERONICA
Veronica Andersonii



The Shrubby Veronicas

pressed to the surface of the stem, and the stem so much branched that it is the living image of that conifer. Of course, when the little insignificant clusters of purple flowers appear at the end of the branches, the true nature of the shrub becomes obvious.

The well-known garden Veronica, *V. Andersonii*, is a hybrid which has arisen through the crossing of the Willow-leaved Veronica with the very rare cliff-growing species, *V. speciosa*. In a variety often seen the foliage is variegated, green and pale yellow, with a yellow band edging the large leathery leaves.

All the shrubby Veronicas are evergreen. The leaf buds are produced at the tips of the branches, and the method of development is interesting. When the outer pair of leaflets enfolding the erect terminal bud part and lie back, they disclose a younger pair standing erect but at right angles to the original plane of the initial pair. These, in their turn, enlarge and stretch outwards and show a still younger pair standing erect, and again at right angles to the previous pair, i.e. parallel to the initial pair. Thus there is one leaf enclosure within another—analogueous to those Chinese toys where we have a long series of gradually diminishing boxes fitting one inside another.

Flowering begins in late spring, and runs right on through the summer into late autumn. The flowers of the Veronica shrubs are always arranged in spikes,

Beautiful Flowering Shrubs

known as racemes, where the older flowers are at the base, the youngest at the tip, and these spikes are always longer than the leaves. In Travers's Veronica they are short thick pyramids of white or purplish-white little flowers; the shade varies in depth. In the Box-leaved Veronica, too, they are short, with the white flowers even more densely clustered. On the Willow-leaved Veronica they are long and pointed; they hang in pairs—entrancing blue-white “tails”—drooping five or six inches in length all over the plant, and each composed of anything between one and two hundred small flowers massed together, while double that number of stamens project their dark heads and soften the contour of the whole.

As the type of flower is one with that of all other Veronicas, herbs or shrubs—with that, for instance, of the little blue Speedwell which haunts our countryside in spring—a description of this Willow-leaved Veronica's flower will serve for all; the differences are only incidental and minor. There are four sepals, narrow and pointed; four petals whose bases are joined to form the shortest of tubes, but whose upper parts form four lobes; the top lobe is largest, because, in some far distant era, two upper petals of an original five united to form it. On the top of the petal tube are set two dark-headed stamens which stretch out on either side like horns, and form an alighting platform for insect visitors. The inside of the white petal tube is fringed with hairs, protectors against

The Shrubby Veronicas

moisture. Down at the bottom is a green seed-case, and up through the tube rises a long column, but not so long as the stamens. In these drooping clusters the flowers naturally tend to hang inclined at an angle, and so densely are they clustered that the many visiting insects can each rest on one while probing the secret recesses of the other. Self-fertilisation is impossible with such widely diverging stamens, and cross-fertilisation is the rule. Bees, in particular, love the *Veronica* blooms, and night-flying insects visit them too; for, as evening falls, and the contour of the dark green foliage sinks into the background of the night, then the moonlight-coloured spikes seem to gleam out with a pale luminousness that marks them as fit places of call for the soft-flying denizens of the dusk. In a Cambridgeshire garden, a Willow-leaved *Veronica*, sheltered by a greenhouse wall, grew into a really magnificent shrub, whose graceful slender foliage was in late June almost veiled by hundreds of pale drooping tails of flowers.

With the close of blossoming the petals fall, carrying the stamen pair with them, and in place of each flower a little brown two-celled capsule containing many seeds appears.

In the hybrid, *V. Andersonii*, there are long narrow spikes of purple flowers, which in the variegated variety make a specially gay show among the yellows and greens of the foliage.

Beautiful Flowering Shrubs

In *V. angustifolia*, the pale lilac clusters are in pairs, and three or four inches long; in *V. anomala*, they tend to be pink, and are but short, while the individual flowers composing them are very minute, but the fact that several are clustered together at the tip of a branch, causes the shrub to provide quite a good floral show, and makes it a desirable addition to a garden.

The very formal *V. Traversii*, and the less known but handsome *V. anomala* are the hardiest, and will grow in most places if not too exposed; *V. buxifolia* may perhaps be also classed with them; the more graceful and ornamental *V. salicifolia* needs sunshine and a certain amount of shelter here, though in New Zealand it is the most widely spread of all the species; and the same remark, as regards sunshine and shelter, applies to the gay *V. Andersonii* and the quaint *V. cupressoides*.

These shrubs belong to the botanical family, *Scrophulariaceæ*, and have the foxglove, snapdragon, musk, calceolaria, etc., as fellow members.

Soil and Cultivation.—The cultivation is of the easiest, and the soil they prefer is a sandy loam. They are best propagated by cuttings taken in early autumn and placed in a cold frame.

XXXI

FUCHSIA

Fuchsia macrostemma, or *F. coccinea*

„ *globosa*

„ *riccartoni*

THE Fuchsia is rather an anomaly among garden shrubs. In the south and west of England, especially by the sea, it is represented by great bushes, sometimes, indeed, by miniature trees boasting a small trunk; in other places, though in summer it makes a fine shrub—five or six feet high—it has really the habit of a perennial herb, for it dies back every autumn to the ground, so that the whole of the bush is one season's growth. In places again where the climatic conditions are hard, greenhouse protection is needed for it during the winter, and it can only be placed out in the garden as a summer visitor. Actual latitude does not appear to have much to do with its presence, for while Cornwall, Devon and the west of Ireland claim to see it at its best, Canon Ellacomb speaks of seeing, at Kirkwall in the Orkneys, houses “covered with Fuchsias from the ground to the roof, with spaces cut out for the windows.” The ameliorating presence of the sea doubtless allowed this.

Beautiful Flowering Shrubs

Our knowledge of the *Fuchsia* is chiefly rounded by the nineteenth century. The story goes that quite late in the eighteenth century, James Lee, the well-known Hammersmith nurseryman, was walking down a street when he saw in a cottage window a new and striking plant. Inquiry showed that it had just been brought home by a sailor returning from a cruise in South American waters. It was eagerly bought by the nurseryman, who later made a considerable profit by selling cuttings of the plant at high prices. Kew seems to have had its first *Fuchsia* from a Captain Firth in 1788, who got it in Chile; at that time Kew and the nurseryman considered *Fuchsias* to be purely greenhouse plants.

The genus is native of Mexico and South America—Peru, Ecuador, Bolivia, Chile and Brazil—and was originally named by Linnæus, to keep the memory green of Leonard Fuchs, a German herbalist, who was born in 1501. He wrote a wonderful "History of Plants," illustrated by many wood-cuts, which is his claim to botanical remembrance. He was a devoted follower of Luther, lived under the patronage of the Duke of Würtemberg, the friend of literature, and died at Tübingen in 1560.

All our garden-shrub *Fuchsias* have red and purple hanging flowers, the calyx consisting of four thick, red, spreading sepals joined in a tube at the base, the corolla of four purple, overlapping petals forming a bell. High

FUCHSIA

Fuchsia Macrostemma



Fuchsia

up inside the drooping calyx tube are set eight green nectaries, two on each sepal.

The stamens, eight in all, are brightly coloured and very long, and hang far below the petals. The seed-case is oval and at the top of the flower above the calyx tube. From it hangs, like a clapper, a very long reddish style with a thickened stigma knob at the bottom, well below the anthers. Obviously the Fuchsia takes precautions against self-fertilisation. A pollen-coated bee clasps the style and stamens and clambers up into the purple bell, there to suck honey. Its first dusty touch smears the stigma with the pollen that it brought with it, its later clasp coats its own body with pollen from those flowers' anthers. So cross-fertilisation happens. Nevertheless, it has been found that some Fuchsias are fertile to their own pollen.

A number of minor differences distinguish the various groups of Fuchsias, and it seems difficult to decide whether these differences are sufficient to exalt the groups into separate species, or whether they can merely mark them off into varieties of one fundamental species. *Fuchsia macrostemma*, the plant of our picture (often known also as *F. coccinea*), is perhaps this species. It is a native of Chile and is the shrub most commonly seen in gardens. Very gay with its reds and purples when at the height of its beauty, it has also a peculiar charm on the eve of bursting into flower, for the then

Beautiful Flowering Shrubs

unopened flower buds, like so many scarlet pendants, each a long oval, hang from the branches, and amply justify the cottagers' name for the shrub—"Lady's Ear-Drops." Its leaves are usually set together in threes, they are a pointed oval in form, with veins deeply defined.

When the flower fades, the scarlet calyx, purple petals and warm-tinted stamens and style all shrivel and fall off together. The green seed-case swells and darkens into a juicy berry, like a black cherry, though not so rounded.

F. macrostemma has a variety built on similar but slighter and more delicate lines, which is known to gardeners as *F. gracilis*.

F. globosa is a variety (or species) where the colouring is identical with *F. macrostemma*, but where the flower buds are quite globular in outline. And even after the buds begin to burst, and broad streaks of purple petals show between the scarlet sepals, the sepal tips adhere, and so for a while a striped balloon still keeps up the "globosa" idea that the globe-like scarlet buds initiated. When ultimately the tips are released, the flower proves to be generally shorter and broader than the corresponding one of *F. macrostemma*. We first read of this Fuchsia at the Horticultural Society Show in 1832, where, trained on a fan-shaped trellis, it evoked great interest and admiration, especially as its origin seemed something of a mystery.

Fuchsia

A hybrid, known as *F. riccartoni*, is often much advocated as specially hardy for gardens. It was raised at Riccarton near Edinburgh nearly a century ago—one of its parents being *F. globosa*—and will stand a Scottish winter in many places. It has the globular buds and short broad flowers of its parent, with the usual red and purple colouring. The leaves are tinged, too, with the prevailing purple.

Prior to 1840, only Fuchsias with red and purple flowers were known, but about that time they began to be raised from seed, and many crosses were effected. In this way varieties having white sepals and red corollas appeared. Later on, too, plants were raised with white corolla and double flowers, but up to the present time not any of these can be called hardy shrubs.

The Fuchsia belongs to the family *Onagraceæ*, and has a curious assortment of relatives—the willow herbs, evening primrose, and enchanters' nightshade being among them.

Soil and Cultivation.—Fuchsias require a rich loamy soil, fairly well drained. They are very easily propagated by cuttings struck under glass, and they may also be raised without difficulty from seed.

XXXII

THE HYDRANGEAS

<i>Hydrangea hortensis</i>	.	.	.	Common Hydrangea, or Chinese Guelder Rose
„	<i>Bretschneideri</i>	.	.	Bretschneider's Hydrangea
„	<i>paniculata</i>	:	.	The Plumed Hydrangea
„	<i>petiolaris</i>			
„	<i>quercifolia</i>	.	.	The Oak-leaved Hydrangea

“**F**EW flowers ever excited greater interest than the Hydrangea produced on its first introduction into Europe, nor do we remember one instance of any tender plant having become common in so short a period,” was the verdict of 1829; and the truth of this remark is evident from the fact that only a decade after its introduction here in 1789, it was declared to be “so common that no description of it is necessary.” It was brought to this country from China, and given to Kew by Sir Joseph Banks, but the credit for sole sponsorship of the plant is disputed, as a Mr. Slater is also said to have introduced it about the same time, and certainly to have been the first to get it to flower in Great Britain. Anyway, it was a happy hit for the florists, and the Parisian gardener who imported the first plants from England into France, is said to have made his fortune from

The Hydrangeas

their cultivation and dispersal. In the East it had long been a very favourite shrub for Chinese and Japanese gardens. Hence it was called *Hydrangea hortensis*. A curious confusion has, however, arisen over the specific name. Lamack, the French botanist, named the whole genus "*Hortensia*," after a Madame Hortense Lepanto, the wife of the celebrated Parisian clockmaker; so that sometimes the name of the shrub is given as *H. hortensis* and sometimes as *H. hortensia*. It was not named after Queen Hortense, daughter of the Empress Josephine, as is often asserted, and therefore there is no real ground for making it a political badge of the Second Empire as was done at one time.

In its usual garden form it is unknown in a wild state, just as the garden guelder rose, or snowball tree, is a very different plant from the wild guelder rose in which the snowball blooms are replaced by flat clusters of many small fertile flowers, surrounded by a few only of the showy sterile florets that compose the whole of each snowball. Indeed, our garden *Hydrangea* is sometimes called the "Chinese Guelder Rose."

The common *Hydrangea* cannot be said to be generally hardy, though in the south of England it grows luxuriantly enough to be twice the height of a man. Its leaves are a long oval with slightly toothed margins, somewhat pale green in colour and noticeably veined. They fall in the early autumn.

Beautiful Flowering Shrubs

The pretty sterile florets, that make up the great rounded bloom, consist of four coloured sepals and nothing else, except perhaps the merest rudiments of other organs, and the blooms are often borne in great profusion; indeed, in a certain case, two adjacent plants were together credited with no fewer than 925 of them. Normally the colour is pink, but the tint varies, and blue blooms, often much sought after, can be induced in various ways, such as by watering the shrub twice weekly with a solution of ammonium alum, or by mixing iron filings or slate chippings with the soil, or even by laying the mowing of lawns round the roots. A shrub with blooms of a rich rose colour transferred to a soil much more strongly ferruginous has been known to change their colour to a beautiful porcelain blue. But it is difficult to explain why, as sometimes happens, the same plant should produce both pink and blue bloom at the same time, though a not very adequate suggestion has been made that the tint depends upon the intensity of the light, shade producing a tendency to blueness. The fact that a shrub will bear blue flowers one year and pink the next, and vice versa is more readily attributable to variation in the soil.

There are, of course, no fruits produced by these sterile florets.

In a Japanese variety of this species—viz: *H. hortensis Mariesii*, so called because it was discovered by Charles

COMMON HYDRANGEA

Hydrangea hortensis

Beautiful Flowering Shrub

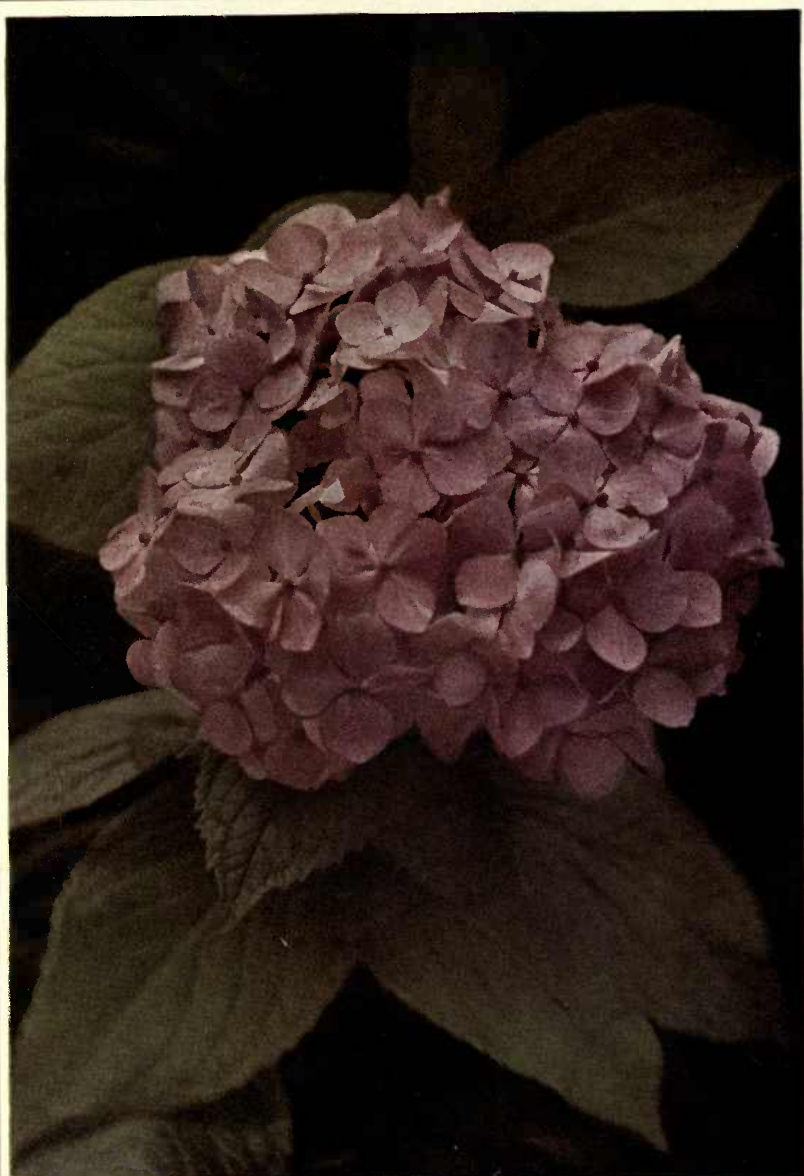
The plant which I have just sent you is a very beautiful flowering shrub, and is called "The Rose of Sharon". It is a very hardy plant, and will grow in any soil, and in any climate. It is a very beautiful plant, and will flower in the autumn, and will continue to flower until the first frost. It is a very beautiful plant, and will flower in the autumn, and will continue to flower until the first frost. It is a very beautiful plant, and will flower in the autumn, and will continue to flower until the first frost.

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The Hydrangeas

Maries, about 1879, while collecting for Messrs. Veitch and Sons in Japan—we have a form which goes more nearly back to the primitive type, for here the blooms are flat clusters, or “corymbs,” which have small fertile flowers in the centre and immense pink or mauve sterile florets in a ring round the edge. Indeed, these outer florets may be as much as three inches in diameter.

In another variety, the hardy *acumina*, the leaves are rough, long and pointed at both ends, and in this and in many other varieties of this species the corymbs again favour the wild form and recall the Hydrangea in its full glory in Japan, as set forth in the following pen picture.

“In June, and until late in the autumn, the wild Hydrangea blooms in every hedgerow. Beside the bright blue which everyone knows and which is so much grown in pots with us, there is another *H. hortensia* var. *japonica*, which is greenish-white in the centre with purple flowers like a halo around the edge. Another, *H. virens*, has hard, round, blue balls in the centre, with florets at the edge of pale blue fading to white and even into a kind of rusty pink. It is rather coarse, but most effective, and in bud both are very striking looking, for the whole flower head appears like a round green snowball. The prettiest ones of all are the graceful slender-stemmed white Hydrangeas. . . .

Beautiful Flowering Shrubs

These were often varied by pink florets . . . and I have found them of a deep crimson.”*

The plumed Hydrangea, *H. paniculata*, is an unusual and remarkably handsome oriental Hydrangea of a distinct species. It carries great conical trusses of white or palest-pink blossoms, which, in the variety *grandiflora*, may be over a foot high and nearly as broad at the base. “I know of no summer flowering shrub so beautiful as *H. paniculata grandiflora*,” says Mrs. Earle, but it is too massive and a shade too pretentious for some tastes. Like all the Hydrangeas it flowers in late summer. It is hardy. In Japan it is known as a small tree.

Another Japanese species, *H. Bretschneideri*, is very free flowering, with flat clusters of small sterile white flowers ringed by large rosy sterile florets. It owes its name to Dr. Bretschneider, who sent it from Japan about 1882. It is quite hardy, given sunshine and good soil.

Finally mention must be made of a very remarkable species, *H. petiolaris*, that Nature intends to be a climber rather than a bush, but which will yet form a most delightful bush if one or two plants be grown over a low tree stump, for its branches spread and interlace and the whole takes on an excellent form. In June, 1914, such a bush at Kew was a perfect picture; large and spreading, its smooth heart-shaped leaves were almost

* N. Taylor, “Japanese Gardens.”

The Hydrangeas

hidden by a wealth of creamy-white clusters of flowers which exhaled the most fragrant of scents. In the centre of each cluster were hundreds of small flowers, all spiky, with myriads of tiny projecting stamens, while at intervals round them were six to eight sterile florets, each with four cream sepals, surrounding an immature seed-case. And over the whole shrub were buzzing and crawling endless flies and small bees lured by the fragrance and tempted by the honey. It was a remarkable sight, and might, with great advantage, be reproduced in many a garden, for this *Hydrangea* is unusually hardy. In Japan it is said to creep up to the top of the tallest trees.

The Oak-leaved *Hydrangea*, *H. quercifolia*, is characterised by large, lobed leaves, and its flower clusters, white at first, turn a greenish-purple later and tend to be pyramidal. It is not very hardy, but it is distinctly ornamental in such places as it will grow.

The *Hydrangeas* belong to the family of plants known as the *Saxifragaceæ*, in which are included also a number of other charming flowering shrubs, such as the *deutzias*, the mock oranges or *syringas*, and the gay flowering currants. The little fertile flowers have five sepals, five petals, two rings of stamens each, and a single seed-case.

Soil and Cultivation.—A warm rich soil with a top dressing of manure in winter should be given these

Beautiful Flowering Shrubs

shrubs. *H. paniculata* and its varieties require a richer soil than *H. hortensis*. They will only thrive generally in the more favoured parts of England. They have a special preference for districts bordering on the sea, and are found at their best in these districts in the West of England.

They should be pruned back in the winter or very early spring, as flowers are produced in the autumn on the shoots of that season's growth.

They are propagated by cuttings of summer wood, which require a gentle heat to start them.

XXXIII

ST. JOHN'S WORTS

<i>Hypericum calycinum</i>	.	.	The "Rose of Sharon," the "Terrestrial Sun," "Aaron's Beard"
			Large-flowered Hypericum
<i>Hypericum Androsæmum</i>	.	.	"Tutsan." "Park Leaves"
" <i>elatum</i>	.	.	Tall St. John's Wort
" <i>hircinum</i>	.	.	Stinking St. John's Wort, or Goat-scented St. John's Wort
" <i>Hookerianum</i>	.	.	Hooker's St. John's Wort
" <i>triflorum</i>	.	.	Three-flowered St. John's Wort
" <i>chinensis</i>	.	.	Chinese St. John's Wort
" <i>patulum</i>	.	.	Japanese St. John's Wort
" <i>Moserianum</i> (hybrid) <i>H. calycinum</i> × <i>H. patulum</i>			
" <i>uralum</i>	.	.	"Nepalese Tutsan," or the "Myrtle-leaved" St. John's Wort
" <i>aureum</i>	.	.	The Golden St. John's Wort

AS summer draws on the golden-flowered St. John's Worts take their place in the ranks of the flowering shrubs, companioned by the white, purple and red of the daisy bush (*Olearia Haastii*) and various spiræas and veronicas. As one passes this genus in review there seems to be an endless variety of species, and though a few outstand, for the most part the differences are so superficial and minute that confusion waits upon him who would know them without a special study. But since there is often so little to choose

Beautiful Flowering Shrubs

between them for effect, it must suffice to indicate here some half-dozen species that suggest themselves as specially desirable and hardy for British gardens.

Conspicuous among all is the low-growing St. John's Wort of our picture, the *H. calycinum*, with the handsomest flowers of the whole species, flowers perhaps even the finest in the whole list of British wild flowers. It is not a genuine native, however, for its home is in South-east Europe, but it has become naturalised here to the great enrichment of our land. Its magnificent yellow flowers are three or four inches across, and they lie wide open facing the sun, giving back gold for gold, therefore is it sometimes known as the "Terrestrial Sun." Within the five shining petals is a great ring of stamens, rather reminiscent of those in a wild rose, hence another pretty and more common name for it is "Rose of Sharon." And since the many stamens have a general air of fluffiness, the plant has also been called "Aaron's Beard" by the country folk. When one looks closely into the stamens, one finds that they are not in a simple ring, as are those of the wild rose, but are really in five bunches. This bunching arrangement, sometimes into three, sometimes into five groups, according to the species, is characteristic of the family *Hypericineæ*, and marks it off from those nearest allied to it. The grouping has arisen through the three or five original stamens having branched off into these bunches in the course

St. John's Worts

of development. Naturally this bountiful supply of pollen attracts pollen-devouring insects, a great advantage, since the St. John's Worts, as a class, do not produce honey. The rounded seed-case in the centre of the flower is surmounted by five columns, and contains many ovules. As it matures into a capsule with numerous seeds it turns reddish.

The leaves are always set in pairs on the stalk in this family, and are dark, shining and evergreen in this particular species. It is a very hardy little shrub, with no objection to shade, and quite oblivious of the drippings from trees, that some shrubs so much dislike. It is therefore specially valuable for the floors of woods and shrubberies; it is also an excellent cover for bare banks and seems very much at home on railway embankments. Its partiality for this last situation might well be more generally encouraged, to the resultant beautifying of our railways, for it has a very extended period of flowering, and from early summer right on to the new year it may be found in bloom.

Also commonly grown, particularly in cottage and old-fashioned gardens, is the vigorous *Hypericum Androsæmum*, the well-known Tutsan. This, too, ranks as a native, albeit a rare one, of our British flora, and in olden days was sometimes called "Park Leaves," since it was frequently found wild in parks. It bears particularly large leaves for a *Hypericum*, and a

Beautiful Flowering Shrubs

profusion of golden flowers, which grow in clusters at the tips of the branches. Each flower is about the size of a shilling, and carries a ring of many stamens and a seed-case with three styler columns, not five, as in the previous species.

The fruit is a pill-like capsule, successively green, bright red and dark purple. Crushed when ripening, a blood-red juice exudes, hence the shrub's second name, *Androsæmum* — i.e. a man's blood (from the Greek). This tendency to colour lies also in the juices of the leaves, which are apt to tinge redly in the autumn, and hence, in consonance with the Doctrine of Signatures, so firmly held by our ancestors, it is not surprising to read in Culpepper that "Tustan, or Park Leaves, is an herb of Saturn and a most noble anti-venerean," purging choleric humours, staying the bleeding of wounds, healing burning by fire, all because of its "signature" of redness. And he emphasises, "It hath been accounted, and certainly it is, a sovereign herb to heal either wound or sore, either outwardly or inwardly, and therefore always used in drinks, lotions, green wounds, ulcers, or old sores, in all balms, oils, ointments, or any other sorts of which the continual experience of former ages hath confirmed the use thereof to be admirably good, though it be not so much in use now as when physicians and surgeons were so wise as to use herbs more than now they do." This last re-

St. John's Worts

mark, written in Elizabethan days, has a curiously modern ring about it, and often finds an echo in these times when mineral remedies have so largely supplanted vegetable. Culpepper's name, Tustan, is a corruption of the more generally used Tutsan. Gerard correctly speaks of "Tutsan," "whose leaves laid upon broken shins and scabbed legs heal them, and many other hurts and griefs, whereof it tooke his name Tout-saine or Tutsane, of healing all things." "Balm of Warrior's Wound" is another pretty old name for it.

Like *H. calycinum*, this shrub does well in shady places, and from June to quite late autumn is attractive, first in its golden flowering and then in its warm-tinted fruit and leaves. It does not usually exceed three feet in height.

A species much resembling *H. Androsæmum*, but taller, is *H. elatum*, the so-called "Tall St. John's Wort." The flowers are slightly larger, the leaves distinctly smaller, and the three styles longer than in the Tutsan; but as relative qualities are always difficult marks of identification, it is better to rely on the fact that in *H. elatum* the fruit is cone-shaped and pointed instead of globular, and the sepals beneath have their points reflexed. It is sometimes found wild in the West of England, but is only an "escape," its true home being the Canary Isles.

The Goat-scented Hypericum, *H. hircinum*, is also a

Beautiful Flowering Shrubs

tall bush, whose stiff, erect branches, clothed with smallish leaves, are crowned by clusters of flowers. Though the flowers are not much larger than a shilling, their attractiveness is enhanced by the possession of many very long stamens which, massed in their clusters, form areas of brilliancy. The three styles are almost as long as the stamens. The specific name *hircinum*, is from the Latin *hircus*, a goat, and refers to the peculiar and rather disagreeable smell that is given off when the leaves are bruised between one's fingers. This goat-like smell is a ready means of identification. This handsome shrub is so well adapted to British conditions that as a garden "escape" it has established itself wild in a few places in England. Really it is a native of the Mediterranean, and was first recorded in English gardens about 1640.

A yet handsomer shrub is *H. Hookerianum*, called after Sir Joseph Hooker, who discovered it on his tour in the Sikkim Himalayas, but actually introduced into Britain from Assam by the collector, Thomas Lobb. The leaves are small, often not much more than an inch long, but the cup-shaped flowers are very large (two inches across) and distinctly beautiful, though the stamens, gathered into five bundles, are not so prominent as in some species. As a rule only one flower is open at a time in each cluster.

In *H. triflorum*, a new importation hailing from Java,

LARGE-FLOWERED ST. JOHN'S WORT

Hypericum calycinum

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St. John's Worts

and apparently not over-hardy, three large flowers open and bloom together, and the vividness of the effect is enhanced because the stamens carry red anthers instead of the usual yellow ones. It is a striking shrub where it will flourish, but it seems to need some shelter and coddling.

The Chinese species, *H. chinensis*, again rather tender, is particularly attractive, because the stamens of its flowers—flowers almost as large as those of *H. calycinum*—stretch far beyond the petals like so many golden rays.

The Japanese species, *H. patulum*, brought to England by Oldham about half a century ago, has also large flowers whose petals overlap. It is very like *H. Hookerianum*, but the contour of its branchlets is angled, not rounded. It is chiefly interesting because it is one parent—*H. calycinum* being the other—of a very desirable dwarf hybrid, *H. Moserianum*. This hybrid was raised about 1887 in a nursery at Versailles, by a M. Moser, hence its name, and it carries flowers almost as beautiful and large as those of *H. calycinum*, while the charm is enhanced by the flowers being set in clusters, though usually not more than one flower is in perfection at the same time. It is a hardy little shrub—"a bed at Kew stood unchanged for 20 years only protected by dry leaves during hard frost," says Mr. Bean.

The Nepalese Tutsan, or Myrtle-leaved St. John's

Beautiful Flowering Shrubs

Wort, *H. uralum*, is a hardy shrub that has been known here for nearly a century. It has aromatic, myrtle-like leaves and smallish flowers, and does not possess the conspicuous charm of many of its relatives. In its home at Nepal it is known as "*urala swa*," hence its second name *uralum*.

Finally, *Hypericum aureum* must be mentioned. It is one of the taller Hypericums, usually about four feet high, and its leaves are characterised by having a narrow golden edge. Its large orange flowers bear masses of long stamens, whose dark reddish filaments add brilliancy to an already brilliant flower. The sepals are large, unequal and leaf-like, and form a platter on which the fruit stands out as a conspicuous cone. A North American shrub, it was recorded at the end of the eighteenth century, but not for another century did it find its way into our gardens, an extraordinary omission, for it has singular beauty and appears hardy here. The leaves fall off in the winter, and the shrub has a tendency to the habit of a miniature tree, with a single main stem. Place should be found more generally for this shrub. Indeed, it is well to encourage the St. John's Worts as a class, for they carry the warmth and colour of summer as few other shrubs do right on into late autumn.

Soil and Cultivation.—Any good garden soil suffices them. They should have plenty of moisture, but be in

St. John's Worts

a well-drained situation. They may be propagated by seeds or cuttings, or in certain species, e.g. *H. calycinum*, by division. Cuttings should be taken in August and placed in sandy soil in a frame. They are better for being well pruned back in early spring.

XXXIV

AUCUBA

Aucuba japonica "Variegated Laurel"

COMMONEST of shrubs—the chief stand-by of park shrubberies, the last resource of the suburban gardener—the so-called "Variegated Laurel" is known throughout the length and breadth of our land. It can stand shade as few other shrubs can; its shining leathery leaves turn off the soot and grime of the town with surpassing ease, and it can live by means of its strong fleshy roots where most others of its kind would starve. Familiarity has unjustly engendered somewhat of contempt for it in these days, but it is, all the same, of very great interest; it is a shrub too with a "past."

Just as William and Mary were taking up the responsibilities of sovereignty in the British Isles at the end of the seventeenth century, a Westphalian botanist, Engelbert Kaempfer, discovered this plant in Japan and made an excellent drawing of it. But he went no further, and almost a hundred years passed before the renowned botanist, Thunberg, first brought it in 1783 to Europe. The striking Japanese plant was

Aucuba

much admired and its cultivation sought, but it was almost killed by cruel kindness, for it was coddled up in greenhouses. However, its hardy nature was soon realised, and by 1813 it was described as one of the hardy trees growing in Kew Gardens. Then a curious fact became apparent.

The *Aucuba* is one of those individuals of the plant world in which the quality of sex is especially brought to the fore, for any single *Aucuba* shrub is either wholly male or wholly female; the two sexes are never combined on the same individual. In the same way we have male willow and poplar trees, and female willow and poplar trees. The flowers possess either male organs—stamens, or female organs—the seeds in their seed-case, but never both. And it so happened that every *Aucuba* in England proved to be of the female sex. The original importation was female, and since the propagation from it had been by cuttings and not by seed, every one of its offspring had been of the same sex as the parent. Even a new importation of *Aucubas*—brought in by Dr. von Siebold from Japan—did not help matters, for the plants, though of many varieties, turned out also to be all of the female sex. Still it must be owned that this fact did not trouble the early Victorian gardeners; the handsome shrub was grown for its leaves and its leaves alone, and that its sex mattered did not occur to them.

Beautiful Flowering Shrubs

But it began to be whispered that the Aucubas in this country in lacking their complementary partner lacked also their chief glory, a crown of brilliant big red berries which, in Japan, made a most brave show against the yellow-spotted leaves; so about 1860 the leading plant collector of the day—Robert Fortune—set sail for Japan with the chief object of procuring a male Aucuba—no easy task. “On my arrival in Japan,” he wrote subsequently, “I lost no time in looking out for the male of this interesting species. I found it at last in the garden of Dr. Hall, of Yokohama.” It was the only one he came across, and it was sent home in an air-tight Wardian glass case and placed in the nursery of a Mr. Standish at Bagshot. “I look forward with much interest,” wrote Fortune, “to the effects of this introduction. Let my readers picture to themselves all the Aucubas which decorate our windows and gardens covered during the winter and spring months with a profusion of crimson berries. Such a result, and it is not an improbable one, would of itself be worth a journey all the way from England to Japan.”

The precious plant flourished and produced male flowers bearing the coveted pollen dust, which was promptly used for the fertilisation of female shrubs, and as a result, in 1864, there was exhibited for the first time in England a female Aucuba loaded with coral-coloured fruit. It created an immense sensation

AUCUBA (Variegated Laurel)
Aucuba japonica

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Aucuba

among gardeners, and a host of amateurs were on fire to produce similar results. Everyone wanted male Aucubas, and fancy prices were offered for them; they frequently changed hands at over a guinea a leaf, and their propagation was hastened by every artifice known to the florist. The following year, at the great Guildhall Flower Show, Mr. Bull gave a famous exhibition of Aucubas covered with scarlet berries, and we are told "the excitement of horticulturists was intense." "The commonest of all known garden trees was thus re-introduced to public notice as an altogether new, interesting and remarkable subject; and thousands who never before reflected upon the laws which govern reproduction in the vegetable kingdom were led to inquire into the first principles of vegetable physiology."*

The original male shrub which Fortune brought home is still alive and vigorous, growing in the private part of the Botanical Garden in Regent's Park, and standing side by side with a female shrub.

Nowadays when berries are desired it is simply necessary to plant an occasional male shrub in the vicinity of the ordinary form, and insects bridge the gulf between them.

The flowers of either kind of shrub are small and arranged as pairs in spikes, which spikes arise within

* Hibbert.

Beautiful Flowering Shrubs

the bud which terminates each branch. Each flower has the most minute of calyces, represented only by four teeth, and four petals arranged cross-wise, of a reddish-brown colour. In the male flowers four little stamens stand between the petals, while in the centre is a green central disc which looks rather like an ovary, but is only a dummy; in the female flowers the stamens are absent, but in the centre of the flower is a genuine green seed-case containing two seeds. The male flowers seem, in this country, to be a trifle earlier in blooming than the female—the latter are at their best at the end of April and beginning of May—but the pollen retains its potency for some time. Little green-flies in abundance may be seen crawling over the flowers—indeed a dull red-brown is the colour the flies specially favour—while big blue-flies may continually be found sunning themselves and crawling round the flower. The spikes of male flowers wither away, the female spikes go on developing and ultimately change into the brilliant berries whose thin red coat is over a second coat of milky white, and the two enclose a fleshy centre. Botanically the fruit is known as a “one-seeded berry.”

Outside the flower spike are groups of leaves, of the palest yellowish-green and of the shiniest surface. They are arranged in pairs and at first stand up erect at the tip of every branch. In the quite young leaves

Aucuba

the "speckling" characteristic of the plant is practically absent. It is only as they grow and darken in patches that the variegation becomes apparent. The question why the Aucuba leaf is variegated is on all fours with the question why the leopard has spots, and is an equally difficult one to answer. One suggestion is that the plant does not absorb enough iron to enable the chlorophyll—the green colouring matter—to form in sufficient quantities to colour the whole leaf tissue. One remarkable power that the leaves possess must be chronicled. Any part of a leaf planted in moist sand can throw off rootlets below and give rise to a new baby plant which rises from the surface of the old leaf. For a time the leaf remains green, carrying its offspring, but finally it yellows and dies—its part is played.

In another form of the plant the foliage is wholly a rich dark green showing no "variegated" character, and this is really the more dignified and handsomer form, and the one, too, on which the scarlet berries show to the greatest advantage.

The Aucuba belongs to the family of the *Cornaceæ*, and the dog-wood is its nearest British relative.

Soil and Cultivation.—The Aucuba will do well in almost any soil; its roots are strong and powerful and can readily obtain nourishment for themselves. It is one of the best shrubs we know to thrive under the

Beautiful Flowering Shrubs

shade of trees, though of course it prefers an open situation on good soil to be at its very best. In the shade it is apt to get a little straggling and does not produce berries so freely. Shrubs of both sexes should be planted in proximity, a single male shrub sufficing to fertilise several berry-bearing shrubs. In the gay little pot plants thickly covered with big shining scarlet berries the fertilisation has always been done by hand. Cuttings or small branches stuck into the ground will root with great facility, as already pointed out, or the shrub can be raised from seed.

XXXV

THE WITCH HAZELS

Hamamelis

<i>Hamamelis mollis</i>	Chinese Witch Hazel
„ <i>japonica</i>	Japanese Witch Hazel
<i>var. arborea</i>	
„ <i>Zuccariniana</i>	
„ <i>virginiana</i>	Virginian Witch Hazel

FROM the East and from the West the Witch Hazels have come to our land to touch with bright gold the grey of our winter landscape. Just when all Nature seems sinking into deep repose, their gaunt bare branches begin to bestir themselves for a plant's supreme effort—the effort to reproduce itself—and out between the rough, leathery scales of their dark buds delicate yellow coils suggest themselves. The coils shake out into fringe-like tufts, and soon the whole shrub—or small tree as it often is—has its branches vested in these fairy-like ribbons. Very quaint, very un-English is the general effect, and indeed all the Witch Hazels are foreigners to us and bear no relation whatever to our native hazel with its swaying yellow catkins. Of the three species found in our gardens, one—the handsomest—*Hamamelis mollis*, comes

Beautiful Flowering Shrubs

from China; the second, also beautiful and hardy, but dwarfer, *Hamamelis japonica*, from Japan; while the third—the oldest known here—*Hamamelis virginiana*, comes from Virginia, U.S. George Ellwanger, writing "The Garden's Story" in Rochester, in the State of New York, says: "But, amid the melancholy of the autumn muse and the gloom of autumnal skies I catch a pleasing fancy to nurse through the tedious winter hours. I thought the crocus the herald of spring: but in the copse I already catch a gleam of vernal gold. The witch-hazel (*H. virginiana*) is first to put forth its sturdy blossom pure and fresh at this season. Often I meet its flower-clusters in the wintry woods when all its companions, save the oak, beech and hornbeam are denuded of foliage, smiling at the cold and snow. Does it not convey a meaning? Its pale yellow petals speak to me of immortality, and its fragrant breath exhales a promise of coming flowers."

This Virginian Witch Hazel was brought to Great Britain as long ago as 1736 by Peter Collinson, of Mill Hill, who brought over from America so many foreign plants—*Rhododendron maximum* among them—to grace his garden. It has, however, never been very generally cultivated in this country, and, indeed, in its case, the special charm of the genus, the winter flowering and studding of bare branches with gay colour, is somewhat in abeyance, for the flowers here tend to begin to

The Witch Hazels

come before the leaves have commenced to fall, and though the flowering continues into the winter, the earlier clusters are often overshadowed by dying foliage. The leaves are large, broad and ovate, very like our hazel, hence the shrub's common name, and this resemblance led to twigs of the plant being used for divination in America, as hazel twigs are used in this country, therefore was the plant termed "Witch" Hazel, sometimes written Wych-Hazel. There seems to be no information to hand as to whether the Orientals have detected any magical power in their representatives of the group. The leaves of the American species, together with the bark, possess valuable medicinal qualities, for they are powerfully astringent and check hæmorrhage. They are, indeed, the basis for two well-known American medical preparations, namely, Pond's Extract and Hazeline. Witch Hazel plasters, too, are considered valuable for reducing varicose veins.

Of the two gayer Oriental species, the Chinese Witch Hazel can always be known because the under side of its large ovate leaves is covered with a dense white felting of hairs. Hence the specific name "*mollis*"—soft. It was first sent home in 1879, by Mr. Maries, one of Messrs. Veitch's plant collectors, who secured two or three plants in the province of Kiukiang, really at the risk of his life, for at that time the inhabitants of those regions were distinctly unfriendly to European

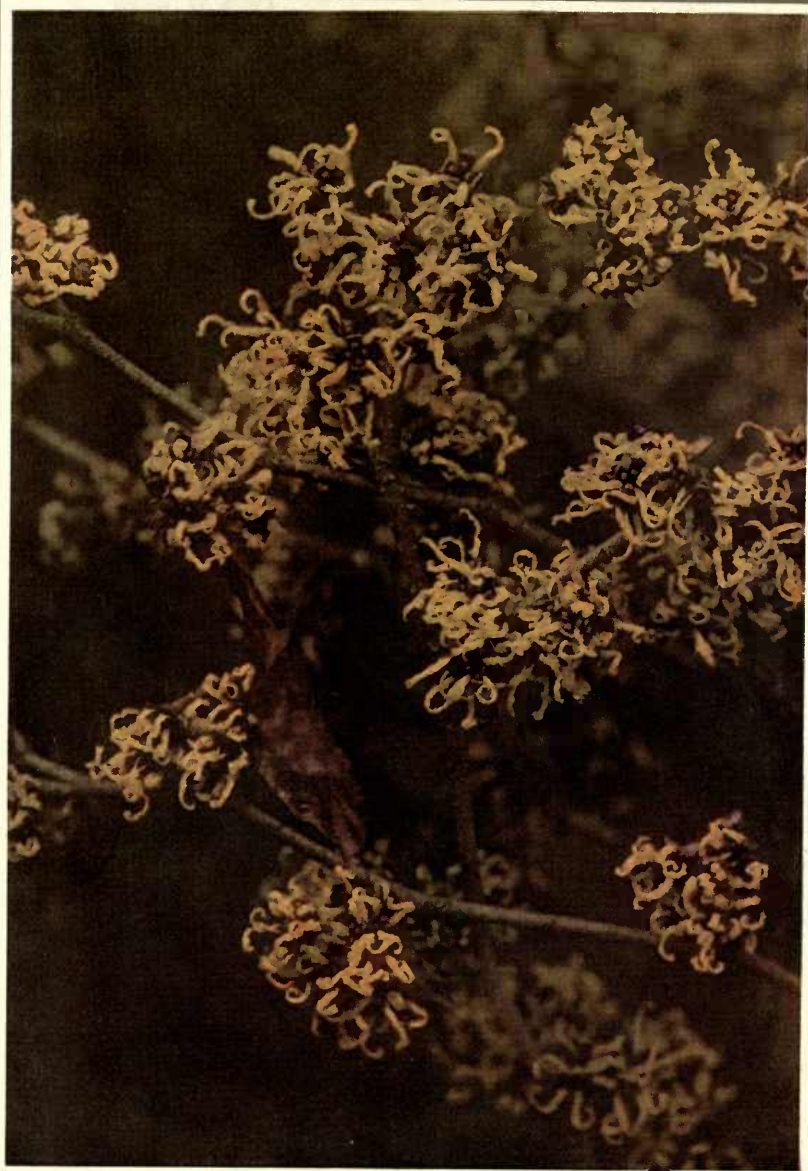
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intruders. But though this Witch Hazel then grew from seed in Messrs. Veitch's nurseries, it was not until ten years later that it was botanically figured and described by Dr. Henry.

The Japanese Witch Hazel, with smaller leaves and of smaller build generally, is a variable shrub which disdains to be limited to very fixed characteristics. It is, however, usually known in its attractive variety, *H. j. arborea*, where the tufts of yellow flowers have dark crimson touches. For here each flower has four short crimson sepals, sharply recurved; four long, thin, narrow, rich yellow petals, like strips of gold, crinkled and twisting; four stamens, quaint, thick, red objects which have two smooth basin-like anthers side by side at the top. At first these recesses are each closed by a door or flap hinged on to their inner side, but in the fullness of time this opens, like the door of a safe, disclosing treasure within, golden-yellow pollen, which shows in striking contrast to the crimson of the basin in which it lies. For the most part this pollen tends to adhere to the opening door, so that it is thus brought out of its recess and forced upon any visitor that intrudes into the centre of the flower. In the middle of the four stamens two green columns stand up stiffly and closely from a rough green seed-case. After fertilisation matters progress very slowly, and it may be as much as a year, or even two, before the dry woody capsules fall. Eventually,

JAPANESE WITCH HAZEL
Hamamelis japonica : var. *arborea*

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TO VALL
ADRIANO

The Witch Hazels

however, they open at the top and the seeds fall out, but germination, like development, is a slow process with them. It is said that the seeds of the Virginian species are edible. Of course, all three species have flowers of the above type.

Another variety, *H. j. Zuccariniana*, has the petals a pale lemon-yellow colour instead of a rich gold, but indeed the seeds of neither of these varieties breed true, and the true *H. japonica*, or either of its varieties, may appear among any sowing.

The flowers of *H. japonica* are not quite so large or so vivid, and not nearly so highly scented as those of *H. mollis*, and the Chinese shrub is always gay with its blossoms at least a fortnight before the Japanese species comes to its own.

The shrubs belong to the small family *Hamamelideæ*.

Soil and Cultivation. — All the Witch Hazels are hardy in this country, and are little trouble to cultivate in good, light, loamy soil. They are propagated either by seeds or layers. Old and dead wood should be cut out after flowering.

XXXVI

LAURUSTINUS AND THE VIBURNUMS

<i>Viburnum Tinus</i>	.	.	.	.	Laurustinus
„ <i>opulus</i>	.	.	.	.	Guelder Rose
„ <i>lantana</i>	.	.	.	.	Wayfaring Tree, or Cotton Tree
„ <i>lantanoides</i>	.	.	.	.	Hobble Bush
„ <i>plicatum</i>	.	.	.	.	Japanese Snowball
„ <i>macrocephalum</i>					
„ <i>tomentosum mariesi</i>					
„ <i>rhytidophyllum</i>					

“This flower that smells of honey and the sea,
 White Laurestine, seems in my hand to be
 A white star made of memory long ago
 Lit in the heaven of dear times dead to me.”

(Swinburne.)

THE first record of the Laurustinus growing in England is in an old Herball published in 1596, and in the following year John Gerard, in his “Grete Herball,” refers to it thus: “The wilde Baie groweth plentifully in every felde of Italy, Spaine and other regions which differ according to the nature and situation of those countries: they growe in my garden and prosper very well.” So apparently the shrub, a native of the Mediterranean region, was then quite established in England. He further says it was “called,

Laurustinus and the Viburnums

in Latin, *Tinus* and *Laurus sylvestris*, and of divers Durillo; in England wilde Baie." It was known as "Laurus" and "Bay" by old writers, because it was supposed to be near akin to the Sweet Bay, *Laurus nobilis*, on account of the resemblance of the leaves, but it is not really related, the Laurustinus being a member of the *Caprifoliaceæ* family, and allied to the guelder rose, wayfaring tree and honeysuckle, while the sweet bay is a member of the family *Lauraceæ*. It was put in its rightful place among the Viburnums by Linnæus.

The Laurustinus is one of our most charming evergreens, and all the more a *persona grata* because it flowers in the dead of winter, with hardly any other shrub in competition. From this fact it was sometimes known in olden times as the "Flower of the Circumcision"—Jan. 1.

"Fair tree of winter! fresh and flowering,
When all around is dead and dry;
Whose rosy buds, though storms are low'ring,
Spread their white blossoms to the sky:
Green are thy leaves, more purely green
Through every changing period seen;
And when the gaudy months are past,
Thy loveliest season is the last."

(B. Montgomery.)

In the south of England or in fairly sheltered places, its flowering season commences in December and runs right on through the winter, March perhaps seeing it

Beautiful Flowering Shrubs

in its zenith of beauty. Its little white flowers are arranged—150 maybe together—in flat clusters at the end of the branches, the creamy petals of the fully opened flowers being in striking contrast to the ruby red of the unopened buds and the crimson of the stalks. Each flower has a tiny five-lobed calyx of ruddy sepals, and five creamy-white petals that unite into a little tube at their base, the ruddiness of their backs so noticeable in the bud stage completely disappearing as they develop and expand. There are five creamy stamens on long stalks and a little white seed-case surmounted by a short thick column tipped by a three-lobed stigma. Round the top of the ovary is a honey-gland, and this, together with the faint odour of almonds that clings about the clusters, encourages the visits of short-tongued bees and flies. These, crawling over the closely set clusters, bring about cross-fertilisation between the flowers of the same cluster, with an occasional cross between flowers of adjacent clusters and adjacent shrubs.

The dark blue berries which in June follow the flowers are of no edible or medicinal value, as Parkinson (1656) said in his "Earthly Paradise": "The wilde Bay hath no property allotted unto it in Physick, but that it is not to be endured the berries being chewed declare it to be so violent, hot and choking." The starlings, however, eat them in considerable quantities.

Even when the shrub is out of flower, the thick

LAURUSTINUS
Viburnum Tinus

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Laurustinus and the Viburnums

foliage of dark-green, ovate, leathery leaves gives it a certain dignity and attractiveness. In the shining-leaved Laurustinus, *V. Tinus lucidum*, the leaves are remarkably large and glossy, the flower-clusters, too, being very fine and gleaming, especially in April. Another variety known as *Viburnum Tinus Fræbeli* has rather paler foliage.

Soil and Cultivation.—The Laurustinus is of an accommodating nature. It will thrive on almost any soil, though if it has any preference it is for a red sandstone. It is quite happy in a town garden, and does not shirk the seaside if it be a little sheltered from the winds; it has a definite aversion to bitter north and easterly breezes. But it is very fairly hardy—the *lucidum* variety is more tender—and will weather through all the severest winters. If by chance it gets frosted, it is said to have a particularly unpleasing and searching smell. In a few specially favoured situations it will run to the dimensions of a small tree. It is propagated by taking half-ripened shoots and placing them in sand to strike.

THE VIBURNUMS

The Guelder Rose, *Viburnum opulus*, in its wild form seems singularly overlooked as a desirable shrub for gardens. "A prophet hath no honour in his own country," and so probably this lack of appreciation is largely

Beautiful Flowering Shrubs

due to the plant being a true Briton. Nevertheless, those who do accord it a place know that, though its foliage is not evergreen like that of the *Laurustinus*, the individual leaves, with their three lobes and deeply toothed margins, are larger and handsomer. Curious honey-glands are found at the tip of two thread-like structures at the base of the leaf stalk, and other honey-glands are on the stalk itself. The flower clusters are flat, as in the *Laurustinus*; but while the central flowers are smaller, those of the outermost ring are much larger and showier. Still, the latter have sacrificed everything to appearance—to becoming lures to the insect world—and they contain no essential organs; the possession of a seed-case and stamens is left to the small flowers of the centre. Hence it is from the inconspicuous individuals alone that there come in autumn those wonderful translucent berries which, hanging among gloriously reddening foliage, transform the slighted wild Guelder Rose into “a shrub that seems to have come from that Garden of Aladdin where the fruits of the trees were jewels.”

The cultivated form of the Guelder Rose—the Snow-ball Tree—“which,” as Parkinson said, “for the beauty of it deserveth to be remembered among the delights of a garden,” knows nothing of this fruit jewellery. It has thrown all its energy into transforming the whole of every flower cluster into great snowy balls of

Laurustinus and the Viburnums

attractive florets, going to such extremes, indeed, that now there is nothing behind the attractiveness, nothing is left when they wither; the florets are all absolutely sterile, mere empty show, fruit is an impossibility.

The Wayfaring Tree, *V. lantana*, as its English name implies, is a small tree rather than a shrub. Here the flowers are all alike and perfect and all small, and in flat groups as in the *Laurustinus*. Here, too, we have gorgeous red berries and brilliant foliage in autumn. The leaves, stalks and buds are downy; hence it is sometimes known as the "Cotton Tree." It also is a native of this country and makes a desirable addition to a garden.

The *Viburnum plicatum* (with pleated leaves) and *macrocephalum* (with specially large flower-heads) are the Japanese and Chinese equivalents of our Guelder Rose. They were found by Robert Fortune during his wanderings in China and Japan, and first sent to England in 1844. They both have fertile and sterile forms, as does our native plant, but both exceed ours in beauty and size of flower clusters. *V. macrocephalum* is not so hardy in this country as the other *Viburnums*.

To *Viburnum tomentosum mariesi* one would call special attention, as it is comparatively little known, though it appears hardy, and is certainly one of the most desirable shrubs that could grace a garden. A specimen recently seen flowering in a Cornish garden

Beautiful Flowering Shrubs

was an extraordinarily beautiful sight. It was about five feet high; the branches ran out horizontally and the long narrow leaves hung straight down from them in rows. Upon the branches, as though snow had fallen thickly, were closely-set clusters of creamy-white blossoms, and the whole shrub looked as though built up from the ground in layers of green and white. In the brilliant sunshine the effect was quite dazzling.

Viburnum rhytidophyllum is a shrub on bold, handsome lines. The crinkled, leathery, evergreen leaves may be seven or eight inches long, and they hang down faces outermost. The flowers are in big clumps, and the following fruit is first bright red and then shining black. This shrub comes from China, as do also a number of other species of *Viburnum* introduced into this country during the last few years. Altogether there are perhaps some forty species now in cultivation, but the ones here mentioned are those that have so far proved most suitable to British gardens.

Soil and Cultivation.—The *Viburnums* all like sunny quarters and good soil, and are propagated by cuttings.

XXXVII

GARRYA

Garrya elliptica

„ *Fremonti*

IT is sometimes said that the Garrya was David Douglas's greatest botanical "find," no mean compliment this, when one remembers that that most indefatigable and bravest of plant collectors introduced no fewer than 217 new species of plants into England. It was in 1827, when Douglas was travelling in the west of North America, that he first saw this beautiful evergreen dripping—no other word expresses it—with its graceful silvery catkins. He waited his time and later gathered the black berries which, on some plants alone, follow the catkins. These he forwarded to the Horticultural Gardens at Chiswick, and in 1834 a Garrya flowered in this country. Douglas himself named it "Garrya" as a compliment to Nicholas Garry, who was at that time Secretary to the Hudson Bay Company, and to whom he owed much assistance and encouragement in his American botanical travels. At first botanists were greatly exercised about the new shrub. It was supposed to represent a natural order altogether distinct from any previously known, but though this

Beautiful Flowering Shrubs

contention is not now held and it is classed in the small family *Cornaceæ* with the dog-wood and the aucuba, yet it forms a very distinctive and anomalous genus within that family.

The most interesting point about the *Garrya* is that some individuals are male, some are female, and though both bear catkins one never finds both male and female catkins on the same shrub. The two kinds of catkins are very similar in appearance, but the male are rather larger and finer. They are curious attractive objects, usually five or six inches in length, though they may be even a foot long, and they hang straight down so that the shrub in flowering time is a dark green mass of foliage scored by innumerable short, grey, parallel lines—a most striking object. In fact, it is quite unique among shrubs, and its inherent charm is enhanced by the fact that mid-winter is its time of flowering, December, January and February seeing it at its best.

Each catkin consists of a long axis on which is set in a spiral a host of tiny flowers. On the male catkin there are a number of rectangular-looking scales, from beneath the edge of which certain male flowers appear, each flower having four sepals and four stamens, no petals, and only a rudimentary and quite useless seed-case. On a female catkin there are similar scales, but the little protruding flowers have no calyx and only rudimentary stamens, though they possess a good seed-

GARRYA
Garrya elliptica .

The history of the United States is a story of the growth of a nation from a small colony to a great power. It is a story of the struggles of the people to establish a government that would protect their rights and promote their welfare. The story begins with the first settlers who came to the New World in search of a better life. They found a land of opportunity, but also a land of hardship. They had to fight for their survival against the elements and the native Americans. They also had to fight for their freedom against the British who sought to control them. The story continues with the American Revolution, a war for independence that resulted in the birth of a new nation. The new nation was founded on the principles of liberty, justice, and equality. It was a nation that was built by the people, for the people. The story of the United States is a story of the triumph of the human spirit over adversity. It is a story of the power of the people to create a better world for themselves and for future generations. The story is a testament to the strength of the American people and the values that they hold dear. It is a story that inspires and motivates us to strive for a better future.

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Garrya

case and two proper ovules. On the top of the seed-case are two short columns or styles. The seed-cases ripen into black berries and the ovules into fertile seeds; on the top of the berries can be seen the remains of the styles. It was Dr. Lindley, Professor of Botany in the University of London, who first elucidated this botanical riddle.

The Garrya's leaves are set on short stalks opposite to each other in pairs. They are leathery in texture and a long oval in form, their margin is waved irregularly and their under side is hoary with a coat of intertwined hairs. Their glossy surface and their thick texture make them admirably suited to withstand the dust and soot of towns, hence in not too rigorous a climate and in a fairly sheltered spot they make an admirable shrub for town planting in garden or park. They are sometimes planted, too, to grow over a porch or upon a wall, or to serve as a hedge; but though they are excellent in all these capacities they are really best seen to advantage when growing as a bush with plenty of space all round. In a crowded situation the quaint effect of the dripping lines of the grey-green catkins is apt to be lost. But to see the Garrya at its very best in this country one should visit some of those Cornish gardens where huge bushes, fifteen feet high and as much in diameter, revel in the mild and equable climate and add dignity to their surroundings.

Beautiful Flowering Shrubs

All told, thirteen species of *Garrya* are known to be in existence, but all are American, hailing from California, Mexico and Texas. Not a single one is known to be a native of the eastern world.

Though at times various species of *Garrya* are offered by nurserymen, yet none of them is superior to *Garrya elliptica* as a garden shrub. *Garrya Fremonti* has perhaps a slightly more attractive foliage—the margins of the leaves are more waved—but the catkins are inferior; and the same may be said of *G. macrophylla*, which has great leaves as much as six or seven inches long.

Soil and Cultivation.—The *Garrya* is very fairly hardy, but since in England it is in more trying climatic conditions than in its own native home of Oregon and California, it thrives to most advantage in the colder parts of this country if grown in a situation with a south or south-west aspect and sheltered from the east and north winds—other trees or shrubs make an efficient wind screen. The soil should not be too moist or rich. It is not wise to try to transplant it after it has once been placed in position. Propagation is best effected late in the summer by taking cuttings, which should be struck in a frame. The male plant being the handsomer is the one that should be planted.

XXXVIII

SOME RARER OR MORE TENDER SHRUBS

IN certain favoured quarters of our country there grow shrubs unknown to the majority of British gardens. Along the sunny South Coast, in certain warm glens of Devonshire and Cornwall, in the moist and equable temperature of western and southern Ireland, rare settlers from all quarters of the earth make themselves quite at home, living in the open all the year round and displaying brilliant colouring and quaint forms unfamiliar to the general eye. And it is well that they should be generally reviewed even by those whose gardens lack some of nature's special graciousness, for it is by no means certain that many of them, if better known, might not be far more generally grown than they are, given a little humouring and sheltering. Many a beautiful shrub is condemned off-hand as not "hardy" when it has never been properly given a chance to show its stamina; many a rare one will live in a warm angle, partly screened, maybe, overhead by trees, even in a garden which for the most part cannot be described as warm and sheltered.

Beautiful Flowering Shrubs

EMBOTHRIUM COCCINEUM.—And chief among the too-little-known shrubs is the truly magnificent Chilian “Fire-Bush,” *Embothrium coccineum*, which in early May days breaks all along its stems into clusters of flame-like blossoms. At its best twenty to thirty feet high, and then tree rather than shrub, it is a sight never to be forgotten, so brilliant is the orange-scarlet of the long thin flowers, each on a scarlet stalk. Forty or more of these blossoms are gathered into clusters that in form are reminiscent of a bottle brush, and at the outset of brilliancy the buds are just narrow, scarlet closed tubes, swollen at the tip and about an inch and a half in length. As they mature the four petals split from the tip down half their length, and coil sharply backwards, and the scarlet column from an orange ovary protrudes far beyond them. The stamens are very short and curiously placed, for they are sunk in little hollows at the tips of the petals (hence the swollen end of the bud), and hence, too, the shrub’s name—*em*, in, and *bothrion*, a little pit. The coiling back of the upper part of the petals, of course, exposes them and allows for the dispersal of the pollen.

For a month or more it is indeed a “Fire-Bush,” the dark shining green leaves, each a long narrow oval with plain margins, forming a fitting background for the floral brilliance. Set alone in the centre of a green lawn or set, as it was once observed, ringed round with fruit

CHILIAN "FIRE-BUSH"

Embothrium coccineum

T.

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Some Rarer or More Tender Shrubs

trees snow-white with blossom, with a cloudless blue sky behind it, it stands in the writer's memory as a revelation of colour. The foliage, by the way, is ever-green, and it is claimed that the shrub is moderately hardy. It belongs to the peculiar family *Protaceæ*, which is unrepresented in our British flora, and the discovery of the shrub is credited to George Foster, who sailed the South Seas with Captain Cook towards the end of the eighteenth century, and saw it in Tierra del Fuego.

Soil and Cultivation.—It is rather capricious as to where it will grow, and does not like lime, but it has been known to withstand 33 degrees of frost, and is found as far north as Inverness, and as far East as Norwich, flowering in the open. Some cutting back of the old wood is desirable after flowering. It is propagated by cuttings struck under glass, and it appears to flourish best in a sandy peaty soil.

THE GREVILLIAS.—Relatives of *Embothrium*, members of the same family, are the Grevillias, two other desirable shrubs, *Grevillia rosmarinifolia*, whose foliage reminds one of the rosemary and whose flowers are rosy red, and *Grevillia juniperina*, with foliage reminiscent of the juniper, and where the flowers are a sulphur yellow; hence the last named has an alternative and common name, that of *G. sulphurea*. The form of the

Beautiful Flowering Shrubs

blossoms of both is similar and eccentric, as befits members of the *Protaceæ* family.

In the *G. rosmarinifolia* the four petals are united, reminding one of a shell, and at first the long, thin column from the ovary, which projects from between the petals on top, has its tip caught in their tip, so that it looks like a curved teapot handle. A little later the tip is released by the petals separating and curling back, and it flies straight out, horn-like, its end, or stigma, shaped like a flattened disc and in a receptive state for pollen. Again the stamens are very small, and on the tips of the petals. The sulphur-yellow flowers of *G. juniperina* are rather longer and slighter, and here, too, the ovary column, yellow in this case, is first curved like a handle and then straightens into a horn. In both cases the flowers are carried in clusters. The narrow, stalkless leaves are set thickly upon the main stems, their edges curling a little backwards, those of the rosemary-like *Grevillia* being a greyer green than those of its juniper-like relative. Both, too, stand the winter well in the South of England, *G. juniperina* being perhaps the hardier—and make quite good bushes. The generic name commemorates Robert Kaye Greville, who wrote the "Scottish Cryptogamic Flora" at the end of the eighteenth century. They are both natives of New South Wales, and *G. rosmarinifolia* was discovered in 1832 by Allan Cunningham.

Some Rarer or More Tender Shrubs

TRICUSPIDARIA LANCEOLATA.—This, again, is a most remarkable shrub and fairly hardy, but surprisingly little known, considering that it was imported from Chile by collectors for Messrs. Veitch about the middle of the nineteenth century (though not distributed until about 1881). Originally it was called *Crinodendron Hookeri*, in compliment to Sir Joseph Hooker, but it is now transferred to the genus *Tricuspidaria*. Its foliage is evergreen, dark and leathery and not specially remarkable, each leaf being about three inches long, of simple lanceolate shape and with a saw-like margin. But closely set among it, hanging straight down on long stalks each from the axil of a leaf, are the flowers, looking like so many unopened crimson fuchsia buds; and the dark green shrub, maybe fifteen feet high, carrying its innumerable bright pendants, is indeed a wonderful and unique sight, a sight, too, not transitory, for though the buds begin to form in the autumn they go on gradually increasing in size and vividness until late May days. Then they open just a little at the tip, hanging bell-like. The sepals are red, the petals still brighter; out of the bell one can shake a little cloud of pollen. The seed-case is at the top of the bell, its column like a fine clapper, and its seeds set freely.

Even when mature, the thick, solid blossoms seem loath to fade and disappear. In fact, the shrub throughout its whole life is a determined and persistent

Beautiful Flowering Shrubs

blossomer, for when quite in its infancy, even when but a foot high, it will hang out gay pendants. It is indeed an asset to any garden. A relative, *Tricuspidaria dependens*, also hailing from Chile, has white blossoms instead of red, and is reported as fairly hardy. They are close relatives of the lime, all belonging to the family *Tiliaceæ*, and are propagated by layers. Sandy loam with fibrous peat is the soil preferable.

PIPTANTHUS NEPALENSIS is sometimes known as the Nepal or Evergreen Laburnum, and is a handsome, not really tender shrub of the Laburnum family, the *Leguminosæ*, blossoming at the same time as that tree. Its value is, however, somewhat discounted by the fact that its lemon-coloured flowers are apt to fall quickly, as its very name implies—*Pipto*, to fall; *anthos*, a flower. Its foliage is a bright light green, each leaf being cut up into three rather large and plain leaflets. Both leaves and flowers are of much stouter texture than the ordinary Laburnum, and the pale-yellow, pea-shaped petals emerge from a whitish woolly calyx of rather large sepals. The ten stamens have thick filaments, while the pod is substantial and set on a short stalk inside the calyx. The stalks of the flower clusters are also thick and unyielding, and hence there is nothing of the graceful drooping that characterises its more familiar namesake. The pod ripens in ordinary warm seasons here, and the shrub can be

TRICUSPIDARIA LANCEOLATA

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easily raised either from the seeds or from cuttings. Though often grown as a wall plant, it will make a good bush in a sheltered quarter.

It was first brought from the Himalayan regions about 1821. The Chinese equivalent for this Indian species seems likely to be rather hardier.

CALCEOLARIA VIOLACEÆ.—Distinctly tender, but particularly charming is the shrub *Calceolaria violaceæ*. Of the same family as the foxglove, the *Scrophulariaceæ*, its dainty little slipper-like flowers are a delicate mauve tinged with yellow, and in a Cornish garden sheltered by the trees it grew well all through the year, forming a big bush full four feet high and flowering lavishly. In a much more exposed public garden on the edge of the sea-shore it also seemed to thrive.

ABUTILON VITIFOLIUM.—This shrub is often seen and usually described as a creeper, but the fact is that it makes an excellent bush though tending to grow tall (say 15 to 20 feet) and a little straggling. Its evergreen leaves are similar in form to those of the vine, hence its specific name *vitifolium*. It carries flowers of rare beauty, rather bigger than a five-shilling piece, and either mauve or white according to the variety; in May, when a pyramid in bloom, it makes a most alluring picture. The fragile corollas of the petals fall off whole and lie

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on the ground as shining discs, their beauty yet unfaded. Seeds were brought from Chile to this country in 1837.

The fact that it can withstand little frost has prevented its being generally well known, but in a sheltered warm situation it ranks as one of the chief gems of a garden.

The Abutilons belong to the family of the mallow—*Malvaceæ*—and are propagated by cuttings of young wood in autumn.

PITTOSPORUM. — We are on firmer ground as regards stamina for our country when we turn to the Pittosporums, for the most part New Zealand shrubs, indeed, often small trees, whose beautiful shining foliage is evergreen, and frequently waxy to the touch. *P. eugenoides*, for instance, has lovely pale-green leaves with white midrib and white stalks that all feel as though coated with a film of wax; and *P. tenuifolium* has thin light-green leaves that make an attractive foliage, particularly when the shrub is grown so as to form a hedge, as has been done in at least one Cornish garden; while in *P. undulatum*, the leaves have an additional charm in being slightly waved. *P. tobira*, which, by the way, is a Japanese species, has thicker and darker but also shining waxy leaves that set off to perfection spreading clusters of white regular flowers, so solid looking that they, too, might

Some Rarer or More Tender Shrubs

have been moulded in wax. The fragrance, however, that they exhale testifies to their naturalness. This Japanese species, introduced into England at the beginning of the eighteenth century, is quite hardy and might well be more generally introduced into the ordinary gardens of the country.

The *Pittosporums* were so named by Sir Joseph Banks, and the name signifies that the seeds are covered as with a pitch-like pulp. The parts of the flowers are regular and in fives—five separate sepals, five separate petals, and five stamens, and the shrubs form the small family *Pittosporeæ*. By the way, there are no representatives of this family in the New World.

EUCRYPHIA. — There are two *Eucryphas* that are very desirable evergreen shrubs. *E. cordifolia*, for instance, makes in the open a handsome picture, with its shining leathery leaves and its great stalks carrying tapering heads of scented white flowers, every one set on a rather solid stalk. The flowers are of the rose-type and have five sepals, five petals and many stamens whose red filaments and brown anthers give a touch of colour to the heart of each blossom. The specific name—*cordifolia*—insinuates that the leaves are heart-shaped, but really they are a broad rounded oval at top and taper towards the stalk. The other

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Eucryphia—pinnatifolia—with dissected leaves, is not evergreen, and its large white flowers have brilliant yellow stamens. It is, however, the hardier and the more beautiful of the two. Both come from Chile, and were introduced to English gardens in the middle of last century, and both grow best in peaty loam and are propagated by cuttings under glass. The shrubs are of special interest to botanists, as they seem not to be closely and definitely related to any plant family. They are, however, usually classed among the Roses.

STAPHYLEA COLCHICA, "the Bladder Nut."—Though only comparatively rare and comparatively tender, this shrub from the Caucasus may well be classed among those that might with advantage be better known for variety's sake. The name *Staphylea* signifies "a bunch," and refers to the fact that its creamy white flowers hang thirty or more together in oval bunches or clusters at the end of the branches, so that at a little distance the shrub is reminiscent of the garden guelder rose (*V. opulus*). The leaves are broken up into three or five leaflets, the bark is pale in patches, and smooth, and the whole shrub is light and attractive. Each flower is about the circumference of a shilling; the white sepals stretch out like the rays of a star; the white petals stand up in a ring, forming a tube surrounding the five stamens and the seed-case. It thrives best in

Some Rarer or More Tender Shrubs

a moist loam, and can be easily propagated in various ways—by seed, cuttings, layers and suckers. It belongs to the *Sapindus* family, and is allied to the maples and sycamores.

Its hardier relative, *S. pinnata*, often known as "Job's Tears," or "St. Anthony's Nuts," is not so attractive in its flowering time, but makes amends by its distinctive fruit, its round, ivory-white seeds being enclosed in white bladders. *Pinnata*, the specific name, refers to the fact that the leaves are cut up into leaflets, technically *pinnæ*. It is a native of South Europe. Both species do well in shady corners, flower in the spring, and lose their leaves for the winter.

COROKEA BUDDLEOIDES.—This is also a pleasant, even if not a particularly exciting shrub, that is rather tender, but will flourish out of doors. It produces pale-yellow, orange-centred, star-like flowers among its dark leaves. Its branching is curiously twisted.

This list of the rarer and more tender shrubs might be indefinitely extended. Before the Great War the introduction of new shrubs into this country was a matter engaging the special attention of florists and plant collectors, while owners both of large and small gardens were beginning to realise the possibilities that lay in this direction. Though a temporary check has

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been given—for the fullest economic production of potatoes and carrots became then the subject nearest a gardener's heart—yet it is to be hoped that in not far distant and happier days—flowering shrubs may once more come into their own. They certainly present a wide field of investigation for the seeker after beauty and novelty in the garden.

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